ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF
THE ILLINOIS STATE MEDICAL SOCIETY

VOL. 77 OAK PARK, ILL., FEBRUARY, 1940 NO. 2

Published monthly by the Illinois State Medical Society under the direction of the Publication Committee of the Council.

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Membership correspondence to Dr. Harold M. Camp, Monmouth, Ill.

Society proceedings and news items and changes in the mailing list to Dr. Henry G. Ohls, Managing Editor, 1618 Juneway Terrace, Chicago.

Subscription price of this JOURNAL to persons not members of the Illinois State Medical Society is $3.00 per year, in advance, postage prepaid, for the United States, Cuba, Porto Rico, Philippine Islands, Hawaiian Islands and Mexico. $4.00 per year for all foreign countries included in the postal union. Canada, $3.50. Single current copies, 50 cents.

Editorials

WE HAVE BUT ONE LAMP BY WHICH OUR FEET ARE GUIDED, THAT OF EXPERIENCE

The tax supported medical service advocates claim that the best way to provide adequate medical care is by socialization. Carl Glennis Roberts, M. D., of Chicago, in the December, 1939, issue of *Opportunity Magazine* challenges such propaganda and asks:

"Upon what proof does this belief rest? Surely if we are to exchange a system which, for all of its alleged deficiencies and inadequacies has given us the best health standards of any country in the world, the least we can accept in return is a system which assures equal or better results in every respect.

"Does socialized medicine do this? Our best proof is in the example of those countries which have fallen captive to its lure. Does it excel our results in decreasing loss of working days, conserving health, prolonging life, providing more and better medical care? Germany is where it started, so let us compare the German report for the year of 1937 with that of the United States:

Germany—Sickness cost employer 5% of income. Sickness cost to employee 8.5% of income. Total: 13.5%. Loss of working days, 17%.

United States—Cost to employer and employee 3% of income. Total: 3%. Loss of working days—6%.

Difference of 10%—cost of daministration and red tape.

More important than income is death rate. Let us contrast this rate in comparing Germany, England and the United States for the years 1933 and 1938:

Mortality: 1933:

51 German towns	8%
118 English towns	8.2%
88 American towns	2.3%

United Satees mortality rate for cities and country: 2.9%.

England, January to July, 1938, death rate: 12 per 1,000.

United States, metropolitan industrial death rate: 8 per 1,000.

WHAT THE 1940 CENSUS WILL SHOW

Three health facts will stand out in the 1940 population returns:

First, an increase in the average age of Americans.

Second, fewer young and more old persons.

Third, reversing the trend of a century a sharp decline in the birth rate, a plain warning that the United States is near the end of its population increase.

The returns will show a population of 131,000,000 or 132,000,000. From close to 3,000,000 in 1921, births have declined to about 2,300,000. The number of men more than 65 is increasing rapidly. Twenty-five years hence there will be twice as many past 65 as there are today. Though the United States will show a population gain for the decade of about 9,000,000 there will be 12 per cent. fewer children under ten. Since 1930 enrollment in the first grade of public schools has declined about 100,000 each year.

Analysis of the vast census records on American population reveal not only the present status of our people, but portend future trends of great significance.

The Census records show the transformation of the American people from a 95 per cent. rural ratio to a major urban status. Today, only 24 per cent. of the population is actually supported by the farms, embracing a farm total of approximately 32,000,000 out of over 130,000,000. Census records reveal the migration resulting from the development of the great frontiers; the rise and decline of industries and the regional effects of drought and depression. There are indications that population swings to the cities for industrial employment in times of prosperity and back to the land in times of adversity. The 1940 Census, by including a measure of the extent of migration in a five-year period, will supply better information on this question than has heretofore been available. The Census shows not only how we shift, but how we live, work and die.

The most vital indicator of the future of America is the birth and death record of the Census Bureau. The birth rate which in 1915 exceeded 25 babies per 1,000 population has dropped to 17. Despite a great increase in total population during that time the actual baby crop dropped from over 2,621,000 in 1921 to 2,203,000 in 1937. In the eight years from 1921 to 1928 inclusive, 2,200,000 more babies were born than in the subsequent eight years, ending with 1936.

In 1880 children under five years of age constituted 13.8 per cent. of our population. Fifty years later—1930—they were only 9.3 per cent. In 1930, 17,587,354 families—58.8 per cent. of the total families—had no children under 10 years of age, and 11,593,871—38.8 per cent.—had none under 21.

And to gauge the future of the nation it is important to know where births and deaths are taking place. The states which have a birth rate in excess of 20 are New Mexico, Alabama, Arizona, Georgia, Idaho, Louisiana, Mississippi, North Carolina South Carolina, Utah and West Virginia. The states which have a birth rate of less than 15 are Connecticut, Illinois, Massachusetts, Missouri, New Jersey and New York.

The birth rate in big cities is barely more than sufficient to maintain present population. And the birth rates in rural areas are higher than in cities generally. And more people are dying in the cities than in the country. For instance: In 1937, 52.7 per cent. of the deaths occurred in cities while 47.3 per cent. occurred in rural areas, but 48.4 per cent. of the births occurred in the cities as against 51.6 per cent. in rural areas.

Coincident with the sweeping decline of youth ratio, there has been taking place a reduction of the death rate. In 1900, 17.6 persons out of each 1,000 population died annually. In 1937, this death rate was down to 11.2. It had got as low as 10.7 in 1933.

The combination of the decreased ratio of youth and the prolongation of life is resulting in a constant increase in the average age of people. From a population formerly preponderantly youthful we are emerging into a population of older people. An indication: In 1880, people aged 65 and over constituted 3.4 per cent. of our population and in 1930 these ages constituted 5.5 per cent.

Census records contain convincing evidence of the prolongation of human life. According to the census statistics covering 1929 to 1931, a

white male baby born today has a life expectancy of 59.06 years. According to the figures of 1900 to 1902, such a baby had a life expectancy of 48.23 years. Female white babies born now have a life expectancy of 62.65 years as compared with 51.08 in 1900.

The advance of medical science in the conservation of life has been tremendous. Census death records show that the great human enemies, such as tuberculosis, typhoid, smallpox, measles, scarlet fever, diphtheria, influenza and pneumonia, erysipelas, maleria, bronchitis, diarrhea and enteritis, cirrhosis of the liver, maternity deaths, diseases of infancy and nephritis, are gradually being conquered. Tuberculosis, which used to take 200 lives each year out of 100,000 population, now takes less than 55; typhoid is down from 36 to 2, and influenza and pneumonia combined are down from 200 to 110. Diphtheria is almost whipped—down from 40 to 2. In a little more than 35 years the deaths per 100,000 in these killers show a total net reduction of 542 per 100,000 population, which would mean a saving of 704,600 lives this year that would have been claimed under the 1900 death rate.

But eight other common killers—cancer, cerebral hemorrhage, diseases of the heart, diabetes mellitus, appendicitis, suicide, homicide, automobile accidents—have been increasing their deadliness. Increased fatalities resulting from these eight amount to 195 per 100,000, which would mean an increase mortality this year from these causes of 253,500. *So, between the two groups of killers, there is a net saving of lives this year amounting to* 451,100.

If it were not for the decrease in the national death rate, the deaths this year would have exceeded the births and, without immigration, our population would already have reached its peak. But as it is, the peak may not be reached before another 20 or 30 years and, according to present trends, our peak population at this time should be around 145,000,000. From then on, unless trends change, there will be a gradual decline.

Of interest to Illinoisians is the prospect that the population hub of the nation may shift to Illinois soil. For fifty years the center of population has been in Indiana. Geographers define the center as "The point of intersection of the north and south line which divides the population into two equal parts, harmonized with an east and west line which divides the population into two equal parts.

Some statistical experts say that the center of popualtion is headed south—drawn by strong population factors in Kentucky, Tennessee and other states south. We still maintain that all the evidence point to the new population hub being located in Illinois.

THE ESTABLISHMENT OF A POLITICAL MEDICAL SYSTEM

The fourth decade of the twentieth century has slipped by without socialized medicine having been instituted in this country. What are the present signs? Have we been unduly alarmed by our journals and our leaders? Surely after almost twenty years of warnings we should now be able to discern outlines of any socialized schemes for medical practice. Just as surely as diseases have their incubation periods and prodromes so do political movements have their symptoms. The first of these is the *phase of propaganda.* The introductory phenomena of propaganda are the stating and mis-stating of the needs for medical care. It has been said that "it is not less wrong; and generally it is much more foolish to palter with truth for a good than for a foolish cause. And the pessimistic descriptions of our age, combined wth romantic exaggerations of the happiness of past ages must tend to the setting aside of methods of progress, but which resemble the patent medicines of a charlaton, and while quickly effecting a little good, sow the seeds of widespread and lasting decay."

The chief methods of mis-stating the needs have been to employ partially truthful surveys of the problems of the distribution of medical care. Much has been made of the slightly mythical person who cannot secure medical care. Occasionally reference is made to the "underpaid" physician thereby expressing the foolish idea of competent physicians securing better returns under government service. This idea of course represents an appeal to wishful thinking which is carried to its extreme in many attempts to legislate economic law. For instance, Congress under the guidance of hopeful social agencies carried wishful thinking to a legislative height in the enactment of the Natonal Labor Relations Act and "it presumed that employers, employees and unions would live happily ever after." What

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is generally lost sight of is that the length of time between the hopes or aims of an act and its accomplishments of good may be as long as required for the gradual evolution of the aim with very little permissive or enabling legislation. Economic law can not be legislated and neither can *personalized* medical practice. We should countenance no other.

Propaganda must not alone be considered for its material—its sources should be known. Most of us are now well aware that many of the so-called surveys which laid the foundation for recommendations for government participation in medical care were started by funds set up by a few wealthy men. Many of us do not know that in 1921 these very columns described "the vain glory of a few subsidized men and women" who "through the media of corporate foundations backing secretly bureaucracy, paternalism and an impossible, erratic super state" would take us over. And nineteen years have borne out a prediction which may have seemed absurd in 1921. These subsidized social groups have sought to drop political medicine on the United States from a central source.

It is well to note that the propagandists were not persons locally charged with the administration of medical care. Nor are they as a group concerned with the business problems of the country although wealthy individuals sponsored them. Perhaps if these sponsors had paid more attention to the distribution of wealth than of medical care we'd see people better equipped to purchase anything they desired.

Since there are some parallels between the current attacks by reformers on business and on medicine it is of interest to note some advice given business by G. W. Dowrie, Professor of Economics at Stanford University [1]"A system of State capitalism would probably succeed in putting everybody to work"—but "The substitution of a deadly regimentation for individual initiative and free enterprise would inevitably result in a marked lowering of the general state of well-being." A very close paraphrase of these remarks applies exactly to the institution of political or State medicine. To offset the developments of the reform propagandists, medicine, even as business, should "in its public relations—use the power of its voice to inform the people continually on the fake planning that clutters its path."

The phase of propaganda in the symptoms of the onset of political medicine proceeds to the *phase of proposal.* Of the proposals so far offered none has attracted so much attention as that introduced in Congress last year by Senator Wagner. This proposed act represented several of the described features of propagandized reform. It vested controlling power of the care of the sick centrally rather than locally. It sprang from a coterie steeped in notions of the virtue of the social State.

Any proposal must be strictly examined in the light of what it can be expected to accomplish. Any proposal should be compared with attempts in social legislation in other fields. Questions should be asked such as those recently put to [2]"the custodians of National power who undertook in 1933 a new trusteeship. Has this trusteeship been truly in the public interest? Has it brought peace with its Wagner Act, freedom from security frauds by its Securities and Exchange Act, economic freedom with its encouragement of the anti-trust laws, a primed pump with its expenditure of billions and a mobilization of credit resources for the benefit of the makers and creators of jobs?" Certainly stability in current fields of experiment should be gained before a new and undoubtedly expensive program of doubtful benefit is instituted.

The phase of propaganda has been going on for many years; the phase of proposal is now extremely active; is the *phase of establishment* taking place? One of the first symptoms would doubtless be in the minds of the physicians of the country. Are we resigned to the imminence of political medicine? And if such a type of practice should come what may we expect the political considerations to be? The current lack of emphasis on management by capable individuals within federal bureaus is suggestive that a medical bureau or department in a bureau will also suffer from a lack of properly organized civil service administration and from political manipulation. For instance the turn of the next national elections will influence between 300,000 and 400,000 appointive positions in the Federal Government service. In a Federal Medical Bureau what will be the jobs traded for

1. The New York Sun, Saturday, January 6, 1940.

2. "1940—Year of Decision"—The United States News, January 5, 1940.

votes? And how will that influence the health of the low-income groups? While we are thinking about these items we might give our attention to the progress of the Ramspeck Bill in Congress. It proposes to repeal provisions in laws creating emergency agencies thereby doing away with about 250,000 *appointive* positions.

Probably of greater concern to the general public than the political features of the establishment of a medical bureau would be its cost. For the health of the people of this country is not its most vital problem whereas the economic situation is. A review of the opinions of twenty-two leading economists on the needs of the country for economic recovery reveals no thought of a factor of illness as interfering with a program of improved business. However, Leonard L. Watkins, Professor of Economics, University of Michigan, says [3]"Sound recovery seems unlikely as long as organized raids continue on the Federal Treasury. . . ." Certain National health schemes recently proposed envisioned the expenditure of several hundreds of millions of dollars. This smacks of a Treasury "raid" even in a day when a million or two is small change.

If all the hopes, aims and wishful thinking of the advocates of the social State came into existence the expense would still hardly be justified from an economic standpoint. But in no other country in the world have their thoughts come true—no other country has a health record superior to ours even though some have well organized medical service plans. The importance of a high level of economic welfare is being shown in Germany. We believe that not only economic well-being but *personalized* medical care—a close patient-physician relationship—are necessary for general good health.

THE ONE HUNDREDTH ANNIVERSARY MEETING

The Illinois State Medical Society will celebrate its One Hundredth birthday in 1940, and the Annual Meeting of the Society, to be held in Peoria next May, will feature "A Century of Progress in Medicine." The officers of the Society, officers of the Scientific Sections, Committee on Arrangements and others who assume responsibility for the arranging of the program and other features of the meeting are endeavoring to arrange an outstanding meeting and one which will appeal to the entire membership.

More general meetings will be held this year than have been arranged for previous annual meetings, in an effort to have a program which will especially appeal to the general practitioners.

Several special meetings will be held on Tuesday morning, May 21, then the meeting will be officially opened at 1:00 P. M. and immediately following this short session the sections will all have their programs under way.

A general meeting will be held on Tuesday evening in place of the usual stag entertainment, with four addresses on subjects of general interest to all practitioners. On Wednesday morning another joint meeting of all sections during which the annual orations in Medicine and Surgery will be delivered. The orator in medicine will be Dr. Leonard Rowntree of Philadelphia, while Dr. Frank H. Lahey of Boston will deliver the oration in surgery.

On Wednesday afternoon section meetings will be held, and the annual President's Dinner will be the only event scheduled for that evening. Some interesting features will be scheduled in connection with the President's Dinner in keeping with the "Century of Progress in Medicine."

Thursday morning will be devoted to another all section meeting and an unusually interesting program is being arranged. Deviating from the customary procedure in this Society, there will be a number of guest speakers from other states on the program, and all of them scheduled to appear before joint sessions and to talk on subjects of general interest to all physicians.

The Secretaries' Conference, Veterans' Dinner meeting, and other special dinner meetings will be held on Tuesday evening, May 21, and interesting programs are being prepared for each of these events. The two meetings of the House of Delegates will be held on Tuesday afternoon and Thursday morning, as per the usual arrangement in conformity to the By-laws of the Society.

The scientific and technical exhibits will be displayed in the large new Shrine Mosque, and in this same building all general and joint session programs will be delivered, and most of the major section meetings likewise held here. The

3. The New York Sun, Saturday, January 6, 1940.

committees responsible for the development of the scientific exhibit are arranging an unusually large number of exhibits which will be of general interest to all members and guests at the meeting.

The Hall of Health will be conducted in the large Peoria Armory, and will be open from noon Tuesday the 21st to Saturday evening May 25th. The Century of Progress will be features in these health exhibits for the public. Additional announcements relative to these features of the Annual Meeting will be published in the March ILLINOIS MEDICAL JOURNAL.

Physicians or organizations desirous of participating in the scientific exhibit or Hall of Health, should write to Dr. N. S. Davis, III, Director of Exhibits, 700 North Michigan Avenue, Chicago. The following officers were elected to preside at the joint sessions:

Dr. Frederick Christopher, Chrm. Evanston Hospital, Evanston.

Dr. E. M. Stevenson, Vice Chairman, Bloomington.

Dr. Warren W. Furey, Secretary, Chicago.

The One Hundredth Annual Meeting will have many new and interesting features, and is being arranged to interest especially the men in general practice.

Dr. Arthur L. Sprenger, Peoria, is Chairman of the Committee on Arrangements, and all communications relative to local matters should be sent to him. With the many sub-committees to insure adequate local arrangements, with the cooperation of the Association of Commerce of Peoria, Peoria Medical Society and the host Society, the Peoria Health Department, and many other local organizations, and with the cooperation of the Illinois Departments of Public Health, and Public Welfare, Dental and other allied groups, the Centennial meeting to be held in Peoria on May 21, 22, 23, 1940, should truly be outstanding.

DON'T FORGET YOUR FEDERAL INCOME TAX REPORT

The Revenue Act of 1939 effected no change in the federal income tax laws of particular interest to physicians, as such. Another law, however, the Public Salary Tax Act of 1939, will subject to the federal income tax laws the income derived from personal services rendered by a physician as an officer or employee of a state, political subdivision, or any agency or instrumentality of either. Heretofore such income has been considered nontaxable under the federal income tax laws if received for services rendered in carrying out a governmental function. Furthermore, the federal government consented to the taxation by states or local taxing authorities of compensation received after Dec. 31, 1938, for personal service as an officer or employee of the United States, any territory or possession or political subdivision, the District of Columbia or any agency or instrumentality of any one or more of the foregoing, if such taxation does not discriminate against such officer or employee because of the source of such compensation. This act, in effect, does away with the immunity from federal income taxes heretofore accorded employees of states, their political subdivisions, agencies or instrumentalities and the immunity from state and local taxes of the income received by federal officers or employees.

Every one who is required to make a federal income tax return must do so on or before March 15, unless an extension of time for filing his return has been granted. For cause shown, the collector of internal revenue for the district in which the taxpayer files his return may grant such an extension, on application filed with him by the taxpayer. This application must state fully the causes for the delay. Failure to make a return may subject the taxpayer to a penalty of 25 per cent of the amount of the tax due.

The normal rate of tax on residents of the United States and on all citizens of the United States regardless of their place of residence is 4 per cent on net income in excess of the exemptions and credits.

WHO MUST FILE RETURNS

1. If gross income was less than $5,000 during 1939, a return must be filed (*a*) by every unmarried person and by every married person not living with her husband or his wife, whose net income was $1,000 or more, and (*b*) by every married person living with her husband or his wife, whose net income was $2,500 or more. If the aggregate net income of husband and wife, living together, was $2,500 or more, each may

*Prepared by the A. M. A. Bureau of Legal Medicine and Legislation.

make a return or the two may unite in a joint return.

2. Returns must be filed by every person whose gross income in 1939 was $5,000 or more, regardless of the amount of his net income and of his marital status. If the aggregate gross income of husband and wife, living together, was $5,000 or more, they must file either a joint return or separate returns, regardless of the amounts of their joint or individual net incomes.

If the status of a taxpayer, so far as it affects the personal exemption or credit for dependents, changed during the year, the personal exemption and credit must be apportioned, under rules and regulations prescribed by the Commissioner of Internal Revenue with the approval of the Secretary of the Treasury, in accordance with the number of months before and after such change. For the purpose of such apportionment, a fractional part of a month should be disregarded unless it amounts to more than half a month, in which case it is to be considered as a month.

As a matter of courtesy only, blanks for returns are sent to taxpayers by the collectors of internal revenue, without request. Failure to receive a blank does not excuse any one from making a return; the taxpayer should obtain the necessary blank from the local collector of internal revenue.

The following discussion covers only matters relating specifically to physicians. Full information concerning questions of general interest may be obtained from the official return blank and from the collectors of internal revenue.

GROSS AND NET INCOMES: WHAT THEY ARE

Gross Income.—A physician's gross income is the total amount of money received by him during the year for professional services, regardless of the time when the services were rendered for which the money was paid, plus such money as he has received as profits from investments and speculation and as compensation and profits from other sources.

Net Income.—Certain professional expenses and the expenses of carrying on any enterprise in which the physician may be engaged for gain may be subtracted as "deductions" from the gross income, to determine the net income on which the tax is to be paid. An "exemption" is allowed, the amount depending on the taxpayer's marital status during the tax year as stated before. These matters are fully covered in the instructions on the tax return blanks.

Earned Income.—In computing the normal tax, but not the surtax, there may be subtracted from net income from all sources an amount equal to 10 percent of the earned net income, except that the amount so subtracted shall in no case exceed 10 per cent of the net income from all sources. Earned income means professional fees, salaries and wages received as compensation for personal services, as distinguished from receipts from other sources.

The first $3,000 of a physician's net income from all sources may be regarded under the law as earned net income, whether it was or was not in fact earned within the meaning set forth in the preceding paragraph. Net income in excess of $3,000 may not be claimed as earned unless it in fact comes within that category. No physician may claim as earned net income any income in excess of $14,000.

DEDUCTIONS FOR PROFESSIONAL EXPENSES

A physician is entitled to deduct all current expenses necessary in carrying on his practice. The taxpayer should make no claim for the deduction of expenses unless he is prepared to prove the expenditure by competent evidence. So far as practicable, accurate itemized records should be kept of expenses and substantiating evidence should be carefully preserved. The following statement shows what such deductible expenses are and how they are to be computed:

Office Rent.—Office rent is deductible. If a physician rents an office for professional purposes alone, the entire rent may be deducted. If he rents a building or apartment for use as a residence as well as for office purposes, he may deduct a part of the rental fairly proportionate to the amount of space used for professional purposes. If the physician occasionally sees a pationt in his dwelling house or apartment, he may not, however, deduct any part of the rent of such house or apartment as professional expense; to entitle him to such a deduction he must have an office there, with regular office hours. If a physician owns the building in which his office is located, he cannot charge himself with "rent" and deduct the amount so charged.

Office Maintenance.—Expenditures for office maintenance, as for heating, lighting, telephone

service and the services of attendants, are deductible.

Supplies.—Payments for supplies for professional use are deductible. Supplies may be fairly described as articles consumed in the using; for instance, dressings, clinical thermometers, drugs and chemicals. Professional journals may be classified as supplies and the subscription price deducted. Amounts currently expended for books, furniture, and professional instruments and equipment, "the useful life of which is short," generally less than one year, may be deducted; but if such articles have a more or less permanent value, their purchase price is a capital expenditure and is not deductible.

Equipment.—Equipment comprises property of a more or less permanent nature. It may ultimately wear out, deteriorate or become obsolete, but it is not in the ordinary sense of the word "consumed in the using."

The cost of equipment, such as has been described, for professional use, cannot be deducted as expense in the year acquired. Examples of this class of property are automobiles, office furniture, medical, surgical and laboratory equipment of a more or less permanent nature, and instruments and appliances constituting a part of the physician's professional outfit to be used over a considerable period of time, generally over one year. Books of more or less permanent nature are regarded as equipment and the purchase price is therefore not deductible.

Although the cost of such equipment is not deductible in the year acquired, nevertheless it may be recovered through depreciation reductions taken year by year over its useful life, as described later.

No hard and fast rule can be laid down as to what part of the cost of equipment is deductible each year as depreciation. The amount depends to some extent on the nature of the property and on the extent and character of its use. The length of its useful life should be the primary consideration. The most that can be done is to suggest certain average or normal rates of depreciation for each of several classes of articles and to leave to the taxpayer the modification of the suggested rates as the circumstances of his particular case may dictate. As fair, normal or average rates of depreciation, the following have been suggested: automobiles, 25 per cent. a year; ordinary medical libraries, x-ray equipment, physical therapy equipment, electrical sterilizers, surgical instruments and diagnostic apparatus, 10 per cent. a year; office furniture, 5 per cent. a year.

The principle governing the determination of all rates of depreciation is that the total amount claimed by the taxpayer as depreciation during the life of the article, plus the salvage value of the article at the end of its useful life, shall not be greater than its purchase price or, if purchased before March, 1913, either its fair market value as of that date or its original cost, whichever may be greater. The physician must in good faith use his best judgment and claim only such allowance for depreciation as the facts justify. The estimate of useful life, on which the rate of depreciation is based, should be carefully considered in his individual case.

In a Treasury Decision, approved Feb. 28, 1934, No. 4422, it was held, among other things, that:

1. The cost to be recovered shall be charged off over the useful life of the property.

2. The reasonableness of any claim for depreciation shall be determined on the conditions known to exist at the end of the period for which the return was made.

3. Where the cost or other basis of the property has been recovered through depreciation or other allowances, no further deduction for depreciation shall be allowed.

4. The burden of proof will rest on the taxpayer to sustain the deduction claimed.

5. The deduction for depreciation in respect to any depreciable property for any taxable year shall be limited to such ratable amount as may reasonably be considered necessary to recover during the remaining life of the property the unrecovered cost or other basis.

Particular attention is called to the last of the foregoing provisions. If, in prior years, rates have been claimed which, if continued, will fully depreciate the cost, less salvage, before the end of its useful life, based on conditions now known, a re-estimate of the remaining useful life should now be made and the portion of the cost that had not been depreciated at the beginning of the year 1939 (for a return for the year 1939) should be spread over this re-estimated life.

Medical Dues.—Dues paid to societies of a strictly professional character are deductible. Dues paid to social organizations, even though

their membership is limited to physicians, are personal expenses and not deductible.

Postgraduate Study.—The Commissioner of Internal Revenue holds that the expense of postgraduate study is not deductible.

Traveling Expenses.—Traveling expenses, including amounts paid for transportation, meals and lodging, necessarily incurred in professional visits to patients and in attending medical meetings for a professional purpose, are deductible.

Automobiles.—Payment for an automobile is a payment for permanent equipment and is not deductible. The cost of operation and repair, and loss through depreciation, are deductible. The cost of operation and repair includes the cost of gasoline, oil, tires, insurance, repairs, garage rental (when the garage is not owned by the physician), chauffeurs' wages and the like.

Deductible loss through depreciation of an automobile is the actual diminution in value resulting from obsolescence and use and from accidental injury against which the physician is not insured. If depreciation is computed on the basis of the average loss during a series of years, the series must extend over the entire estimated life of the car, not merely over the period in which the car is in the possession of the present taxpayer.

If an automobile is used for professional and also for personal purposes—as when used by the physician partly for recreation, or so used by his family—only so much of the expense as arises out of the use for professional purposes may be deducted. A physician doing an exclusive office practice and using his car merely to go to and from his office cannot deduct depreciation or operating expense; he is regarded as using his car for his personal convenience and not as a means of gaining a livelihood.

What has been said in respect to automobiles applies with equal force to horses and vehicles and the equipment incident to their use.

MISCELLANEOUS

Contributions to Charitable Organizations.—For detailed information with respect to the deductibility of charitable contributions generally, physicians should consult the official return blank or obtain information from the collectors of internal revenue or from other reliable sources. A physician may not, however, deduct as a charitable contribution the value of services rendered an organization operated for charitable purposes.

Social Security Taxes.—The excise taxes imposed on employers by section 804, title VIII, and section 901, Title IX of the Social Security Act, commonly referred to as old age and unemployment benefit taxes, are deductible annually by employers in computing net income for federal income tax purposes. If the taxpayer's return is made on a cash basis, as are the returns of practically all physicians, the taxes are deductible for the year in which they are actually paid. If the return is made on an accrual basis, the taxes are deductible for the year in which they accrue, irrespective of when they are actually paid. Employees, including physicians whose employment brings them within that category, may not deduct the tax imposed on them by section 801, title VIII, of the Social Security Act, generally referred to as the old age benefits tax. If, however, the employer assumes payment of the employee's tax and does not withold the amount of the tax from the employee's wages, the amount of the tax so assumed may be deducted by the employer, not as a tax paid but as an ordinary business expense.

Laboratory Expenses.—The deductibility of the expenses of establishing and maintaining laboratories is determined by the same principles that determine the deductibility of corresponding professional expenses. Laboratory rental and the expenses of laboratory equipment and supplies and of laboratory assistants are deductible when under corresponding circumstances they would be deductible if they related to a physician's office.

Losses by Fire or Other Causes.—Loss of and damage to a physician's equipment by fire, theft or other cause, not compensated by insurance or otherwise recoverable, may be computed as a business expense and is deductible, provided evidence of such loss or damage can be produced. Such loss or damage is deductible, however, only to the extent to which it has not been made good by repair and the cost of repair claimed as a deduction.

Insurance Premiums.—Premiums paid for insurance against professional losses are deductible. This includes insurance against damages for alleged malpractice, against liability for injuries by a physician's automobile while in use for professional purposes, and against loss from theft of professional equipment and damage to or loss of professional equipment by fire or otherwise. Under professional equipment is to be included any

automobile belonging to the physician and used for strictly professional purposes.

Expense in Defending Malpractice Suits.—Expense incurred in the defense of a suit for malpractice is deductible as a business expense.

Sales of Spectacles.—Oculists who furnish spectacles, etc., may charge as income money received from such sales and deduct as an expense the cost of the article sold. Entries on the physician's account books should in such cases show charges for services separate and apart from charges for spectacles, etc.

NATIONAL PHYSICIANS' COMMITTEE FOR THE EXTENSION OF MEDICAL SERVICE

The reasons for the establishment of a National Physicians' for the Extension of Medical Service is because of widespread propaganda in general use which has affected the status of the physician and altered the view point of the attitude of the patient.

The future of American Medicine will be determined by the manner in which the doctors face and respond to this new challenge and new responsibility.

If the ethical and scientific standards are to be maintained, the independence of American Medicine preserved, and the public interest best served, American physicians must:

1. Make possible the providing of medical service to the indigent and those in the low income groups, and insure the most widespread distribution of the most effective methods and equipment in medicine and surgery.

2. Assume the responsibility of countering destructive propaganda by familiarizing the public with the facts in connection with the methods and the achievements of American Medicine.

To meet these needs the

NATIONAL PHYSICIANS' COMMITTEE FOR THE EXTENSION OF MEDICAL SERVICE

came into being.

Initially it will advocate:

1. The maintenance of independent private medical practice.

2. The preservation and extension of our independent hospital system.

3. The centralization of all Health Services of Federal and State governments.

4. The determination of health requirements on the basis of locally gathered and locally interpreted data and the utilizing of grants-in-aid only under conditions of locally demonstrated needs.

5. Control and disbursement of public health funds by administrators locally appointed or locally elected.

This committee will, to the fullest possible extent within the abilities and resources, familiarize the general public with its *program and policies, private and public health needs,—the achievements of and the position occupied by American Medicine,—the services rendered by physicians,—how and where these services are available, and will utilize to accomplish these purposes*—

The daily, weekly and trade papers;
Magazines—Radio—Public Meetings, and
The cooperation and services of other agencies or organized groups—which can aid effectively in promoting the objectives sought.

There is considerable evidence that all is not going so smoothly as expected with the plan "Sovietize" American Medicine. The doctors are showing a militant spirit and speaking for themselves in a strenuous way. Free speech is a corner stone of our liberties and the future liberty of the physician certainly rests upon his speaking freely, and forcibly, right now. If the friends of tax-supported medicine find it urgent to flood the country with propaganda advocating socialized medicine, then it is just as urgent for the doctors to wire or write or radio and express their opposition. The side of the doctor from the propaganda standpoint is just as important as the side of these self-appointed "general advisors" and political milkmaids.

TIMELESS TREASURES

"Thanks to books the dead appear to me as though they still lived—everything decays and falls into dust by the force of time; Saturn is never weary of devouring his children and the glory of the world would be buried in oblivion had not God, as a remedy, conferred on mortal man the benefit of books. Books are the masters that instruct us without rods or ferrules, without reprimands or anger, without the solemnity of the gown or the expense of lessons. Go to them, you will not find them asleep; if you err, no scoldings on their part; if you are ignorant, no mocking laughter."—*Richard de Bury, Philobiblon,* 1345.

MEDICAL ECONOMICS

H. M. Camp, M. D.
E. P. Coleman, M. D.
J. H. Hutton, M. D.
J. R. Neal, M. D.
Ralph Pearis, M. D.

Edited by the Committee on Medical Economics
of the
Illinois State Medical Society
E. S. Hamilton, M. D., Chairman
Kankakee, Illinois

R. K. Packard, M. D.
C. H. Phifer, M. D.
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C. B. Ripley, M. D.
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W. M. Hartman, M. D.

Address all letters and communications to the Chairman.

The fate of the so-called Health Insurance Bill in the present session of Congress continues to be the most interesting and vital economic subject before the medical profession at this time. Temporarily submerged by the myriad of controversial subjects arising as a result of the undeclared wars being waged all over the world, many of which are demanding immediate attention, the proponents of Health Insurance have not abandoned their "pet." Temporarily the attention has been shifted to the erection of hospitals by the federal government in those parts of our nation at present inadequately or completely unsupplied with those facilities. There is little or no opposition to the erection of adequate hospital facilities, where they are actually needed, provided the needs are determined before the buildings are erected and the medical profession of the locality are both consulted and listened to as to the urgency of the need.

It is most interesting to read the statements of the different politicians and forecasters as to the probable fate of Health Insurance Bills in this Congress. Congressman Ralph Church of Illinois, in regard to the question of action on "Socialized Medicine," is quoted as having said: "Yes, it is quite probable that something will come up at this session. I do not know exactly what form it will take, but there is a strong lobby behind this proposal. The advanced New Dealers are anxious to go as far as they can with this matter. If the people back home do not want this type of legislation they should get busy *NOW* and let their Congressmen know in no uncertain terms that this is not wanted."

Mr. Wagner continues to sing the praises of his bill, stating: "The bill is a sound foundation for the development of a national health program, based on the American ideal of equality of opportunity for all the necessities of life." Senator Robert Taft, a potential presidential candidate, who has his ears attuned to the national likes and dislikes, says: "A health program—yes; but the Wagner Bill—no. The bill is complicated. It is costly. It fails to encourage private initiative and leads toward socialized medicine. The doctors feel very strongly, and I think justifiedly, that, while the Wagner Bill does not itself contain specifically a program of socialized medicine, it is proposed by those who favor socialized medicine and is open to the suspicion that it will afford a vehicle through which they may put their state controlled medical care into effect."

Miss Josephine Roche, Chairman of the Interdepartmental Committee to Coordinate Health and Welfare Activities, continues to fight the good fight for reform and states: "Millions of our people cannot under existing conditions pay for the medical care they need. Over 90% of the people have less than $3,000 per year. There is more sickness among wage-earners and those with small incomes than among the well-to-do. Here is a vicious circle, those who need most care can least afford to pay for it. Only the Federal government can break this vicious circle."

The *United States News* of December 26, 1939, had a news article on The Public Health —Plans to Better It. This article is too long to reprint, but it should be carefully read by those interested in the subject. All reports to the contrary, Miss Roche is still head of Interdepartmental Committee, and rumor has it that Federal Security Administrator McNutt has adopted a hands off policy. Paul De Kruif is of the opinion that the President is still for the Wagner Bill, but the cost of operation is so great that there is little probability of Congress enacting the Wagner Bill at this session.

Thus the battle rages. Read all the opinions you can find and still you are in a quandary. The fact that this is a presidential election year and there is a decided split in the ranks of the Democrats is most encouraging to the opponents of any bill modeled after or derived from the Wagner Bill.

Meanwhile health insurance plans, both vol-

untary and compulsory, are running into administrative difficulties all over the world. The Group Health Association, of Washington, D. C., the federal Government Clinic, around which there has been much controversy, still show a deficit. A strong attempt is being made to augment its present membership of 2,338. The New Zealand National Health Program is in difficulties after only seven months and may have to be scrapped. It was passed over the protests of the medical profession and already administrative difficulties have appeared of so serious a nature that the government is attempting to work out a compromise. A similar condition has arisen in British Columbia, where the Health Insurance Act passed in March, 1936, where the medical profession has voted against the plan 622 to 13. As a result, the Premier of the Province has announced the indefinite postponement of the operation of the plan. In Australia another Health Insurance plan has run into administrative difficulty and the future is indefinite.

In Dayton and San Francisco there has developed great difficulty between relief officials and the medical profession. In both instances the medical profession claim that there is too much politics in relief and are not cooperating with the relief officials in a manner satisfactory to either party, not to mention the recipients of said relief. This is, of course, an old story to most of us, but one which shouldn't be lost sight of at this time when a threat is being made to enlarge the scope of free medical care.

The December issue of *The Readers Digest* contains an article by Heil Hunger entitled "Health Under Hitler." No comment is needed. It should be read by every member of the medical profession and used as a reference when talking to the laity, many of whom must have read the article.

On February 11, 1940, The National Conference on Medical Service will be held at the Palmer House in Chicago. This is an enlargement of the old Northwest Regional Conference and the entire program will be given over to a discussion of economic problems of the medical profession. The attendance of a large number of men from Chicago, and Illinois is desirable.

The recently organized National Physicians' Committee has the medical profession guessing. While apparently entirely independent of the American Medical Association and organized for the specific purpose of fighting propaganda destructive to the medical profession, its manner of presentation has excited the curiosity of the medical profession without explaining to them either the need of this organization or the manner in which it was formed. Coupled with its presentation is a request for funds, and this is always a handicap to a new organization. As far as the writer has been able to find out, the organization is worthy of support. It is absolutely non-political and non-profit. While its founders are vigorous workers in the AMA, that organization has nothing whatever to do with the National Physicians' Committee. The separation was purposely made definite and so announced so that in no way would the work and standing of the American Medical Association be jeopardized. There can be no argument over the need of a great amount of medical propaganda on controversial subjects the next few years and this will require the raising and expenditure of large sums of money. Since the AMA could not do such work under their charter, a new organization was necessary.

To the best of the knowledge of the writer, the Illinois State Medical Society has taken no action in regard to this committee and its work. Many prominent and influential members of the Illinois Medical Society are members of the state committee. We feel that the question of joining is an individual affair.

We are including in this column this month an editorial by E. H. Skinner of Kansas City, published in the January issue of the *Kansas City Medical Journal entitled* "Our Priceless Heritage." It should be read by every member of the Illinois Medical Society.

E. S. Hamilton, Chairman.

OUR PRICELESS HERITAGE

Many birthrights of liberty and freedom have been flaunted by the succeeding crises of the depression years. It may be well for each of us to take stock and see if the heritages of tradition that surround and support our professional attitudes are worth the fight that must be made to maintain them.

What are these heritages? Who have provided the personalities that give permanence and stability to abstract items of faith in the traditions of medical service to our fellow-beings? What are the facts and their human factors that have

succeeded within our democracy to build a national health and freedom from disease that has achieved an all-time peak in the vital statistics of any and all nations?

Is it not glorious to lift our heads with a priceless pride and realize that never in the history of man—never in the record of civilization—never in the strife for progress has such a high degree of medical service been rendered to any people?

Is it vainglorious to indicate that this record of professional achievement has been accomplished in spite of organized effort to discourage allegiance and faith in American medicine as it is delivered to the American public today?

When one considers the amount of real money that has been contributed by philanthropy and the amounts appropriated by governmental bureaus and boards just to undermine the confidence of voters in the American Medical Profession—only then can we realize that there must be some unfathomable merit and some values beyond all dispute within the fabric of American Medicine.

YES. There must be some priceless heritage that is bred in the bone and sinew of America's physicians. There must be some unalterable ambition to deliver service. Some tenacity to ideals that cannot be menaced by theories emanating from other shores. Some glorious satisfaction in the daily task of service that cannot be diluted by attack, by argument, by God.

Must there be changes in the means and the methods of delivering such priceless service to a people? The answer is, yes. Methods of transporting, of merchandising, of advertising change with the increasing knowledge and ambitions of mankind. All these factors in the distribution of civilization change in their mechanical expression and appearance. But the fundamentals do not change. The fundamentals are such items as life, food, shelter, comfort, happiness and freedom of thought. Freedom to grow in professional activity and usefulness. Freedom to deliver the products of such activity to a faithful following are elements in the priceless heritage that must be maintained in spite of any and all political or social maneuvers at this or any other critical period in American politics. E. H. S.

Kansas City Medical Journal.

HISTORICAL PICTURE GALLERY AT CENTENNIAL MEETING

It is fitting that in connection with the Centennial Meeting of the Illinois State Medical Society there should be a section devoted to a collection of pictures of pioneer physicians in Illinois.

Dr. Carl Black of Jacksonville has a very fine collection of pictures of pioneer leaders in medicine of the state which he has offered to the Illinois State Medical Society to be kept in the archives.

Doctors of the state are asked to send to Dr. Harold M. Camp, Secretary, Monmouth, pictures of the Fifty Year club members of their counties together with interesting short stories about each one. They are also asked to send him cuts or photographs and interesting information about the pioneer physicians of their counties which may be kept in the archives of the Society to augment those already collected by Dr. Carl Black.

THE PROBLEMS OF HOSPITAL MANAGEMENT

In the February 1940 issue of "NATION'S BUSINESS," Lowell Brentano says the problems of hospital management would have puzzled Solomon and the difficulties have tired Job.

The article is both interesting and intensively illuminating from first to last. Economic problems, political interference business men as managers, medical superintendents, lay abuses in general in tax supported hospitals, the better managed privately owned institutions, nursing schools, diet, special problems are all treated in minute detail. Read the article in the original set up in NATION'S BUSINESS.

THE CENTENNIAL CUP

Dr. James H. Hutton, President of the Illinois State Medical Society will donate a suitable golf trophy to be known as the Centennial Cup, as it will first be presented to the holder of the best golf score in connection with the One-Hundredth Anniversary Meeting of the Illinois State Medical Society to be held in Peoria May 21, 22, 23, 1940.

The winner of the cup will be entitled to retain it until the next annual meeting when it will be necessary for him to defend his crown.

and either win it again or turn it over to the holder of the low score at the annual meeting in 1941. In this way, the Centennial Cup shall be returned and played for at each succeeding annual meeting.

An announcement relative to the golf matches to be played on Tuesday morning, May 21, 1940, in Peoria, and the rules relative to the winning of this trophy will appear in the March Illinois Medical Journal, as well as in the same official publication in April and May, so that all medical golfers of Illinois will be thoroughly informed on the subject.

Arthur Sprenger, M. D.,
General Chairman.

WOMAN'S AUXILIARY TO THE ILLINOIS STATE MEDICAL SOCIETY

County News

Sangamon County members were entertained at an elaborate and novel Yuletide Tea, Dec. 11th in the home of Mrs. D. H. Trumpe, Springfield, Ill. The president, Mrs. D. M. Sirca presided during the business session. A Round Table discussion concerning Socialized Medicine was presented by Mesdames: H. Otten, O. E. Ehrhardt, A. Bass, G. R. Irwin, W. J. Morginson, D. M. Sirca, H. H. Southwick, W. P. Levis, R. S. Campbell, H. B. Hinkel and C. S. Mayes.

Mrs. S. R. Magill and Mrs. M. Salzman presided at the urns.

Adams County—Dr. Arthur Bitter addressed the auxiliary members at their November meeting on the subject, "Recent Advances in Surgical Treatment and Operations." Their special objective for the year is to cooperate with the county nurse in arranging an educational program for the laity. This meeting was held at the home of the president; Mrs. Walter Whitaker, Quincy, Ill.

The December meeting was held at the home of Mrs. Walter Stevenson, Quincy, Ill. Hygeia and Medical News were the topics of discussion.

Vermilion County—Following a dinner at the Danville Country Club the auxiliary met at the home of Dr. and Mrs. H. F. Hooker on Dec. 5th. A short business meeting, of which the reading of the By-Laws was the main item on the agenda, preceded a festive Christmas party. Arrangements of the evening were in the hands of the president, Mrs. J. H. Williamson and her committee; Chairman, Mrs. I. J. Scott and Mesdames. H. F. Hooker, H. English, Jean Moore and R. Clements.

Will-Grundy County—The president, Mrs. V. J. Cohenour called the meeting to order at the home of Mrs. D. W. Killinger, Joliet, Ill., on Dec. 11th, 1939. The speaker of the evening was Dr. Melvin F. Blaurock, Psychiatrist at the Institute of Juvenile Research, who gave an illustrated lecture on, "A New Approach of the Problems of Juvenile Delinquency."

Members donated gifts to the Crippled Children's Clinic. Mrs. Geo. Woodruff, 1st vice president, called attention to the Radio Programs sponsored by the Medical Society.

St. Clair County—The Woman's Auxiliary to the St. Clair County Medical Society were entertained at a Tea, Thursday, Nov. 16th in the home of Mrs. I. L. Foulin, East St. Louis, Ill. Mrs. C. C. Kane presided, Mrs. C. C. Winning, State President was the guest of honor and Mrs. R. M. Hill, the guest speaker, gave a travel talk. Mrs. E. C. Spitz and Mrs. T. I. Stines were in charge of the arrangements and were assisted by mesdames Foulon, E. McQuillan, R. Bosworth, J. Cordonnier, W. J. Crotty, W. L. Hanson, A. B. McQuillan and W. Stewart.

Mrs. C. W. Stuart,
State Press and Publicity Chairman.

ANNOUNCEMENT OF RESEARCH FELLOWSHIPS IN MEDICINE AND DENTISTRY BY THE GRADUATE SCHOOL OF THE UNIVERSITY OF ILLINOIS

The Graduate School of the University of Illinois has established four research fellowships to be awarded for one year in the fields of Medicine and Dentistry in Chicago at a stipend of $1,200 per year (calendar year with one month's vacation). Fellows are eligible for re-appointment in competition with the new applicants.

Candidates for these fellowships must have completed a training of not less than eight years beyond high school graduation. This training may have been acquired in any one of the following ways, or the equivalent thereof:

1. Work leading to the B. S. and M. D. degrees (in some instances the candidates would have the M. S. degree, or an additional year or two of hospital training beyond the interne year).
2. Work leading to the B. S., M. S. and D. D. S. degrees.
3. Work leading to the B. S. or B. A. degree in a four-year collegiate course and to the D. D. S. degree.
4. Work leading to the B. S., D. D. S. and M. D. degrees.

Candidates should indicate the field of research in which they are interested and submit complete transcripts of their scholastic credits, together with the names of three former science teachers as references. March 1 is the dead line for acceptance of applications. Announcement of the fellowship awards will be made April 1, becoming effective September 1.

Formal application blanks may be secured from the Secretary of the Committee on Graduate Work in Medicine and Dentistry, 1853 W. Polk Street, Chicago.

ANNOUNCEMENT OF VAN METER PRIZE AWARD

The American Association for the Study of Goiter again offers the Van Meter Prize Award of Three Hundred Dollars and two honorable mentions for the

best essays submitted concerning original work on problems related to the thyroid gland. The Award will be made at the anual meeting of the Association, which will be held at Rochester, Minnesota, on April 15th, 16th and 17th, providing essays of sufficient merit are presented in competition.

The competing essays may cover either clinical or research investigations; should not exceed three thousand words in length; must be presented in English; and a typewriten double spaced copy sent to the Corresponding Secretary, Dr. W. Blair Mosser, 133 Biddle Street, Kane, Pennsylvania, not later than March 15th.

The Committee, who will review the manuscripts, is composed of men well qualified to judge the merits of the competing essays. Dr. T. L. Althausen of the University of California received the Award for the year 1939 in recognition of his essay entitled "A Study of the Influence of the Thyroid Gland on the Digestive Tract."

A place will be reserved on the program of the annual meeting for presentation of the Prize Award Essay by the author if it is possible for him to attend. The essay will be published in the annual Proceedings of the Association. This will not prevent its further publication, however, in any Journal selected by the author.

ANNUAL MILITARY MEDICO-DENTAL TRAINING COURSE AT CHICAGO

The Third Annual Military Medico-Dental Training Course at Chicago for Medical Department Reserve officers will be held by the Sixth Corps Area during the period March 31 to April 13, 1940, according to an announcement made by Lt. Gen. Stanley H. Ford, commanding the Sixth Corps Area.

This course, which will be conducted under the direction of the Corps Area Surgeon, Col. Paul W. Gibson, Medical Corps, with the cooperation of the Medical and Dental schools of the University of Illinois, University of Chicago, Loyola University, and Northwestern University, is designed to increase the military and professional proficiency of Reserve officers of the Medical, Dental, Veterinary and Medical Administrative Corps. The morning hours will be devoted to professional work in the schools, hospitals and clinics connected with the participating universities. The afternoon and special evening sessions will be devoted to problems with the operation and functioning of the medical service in war. The military courses for the current year will be especially concerned with problems of mobilization as they affect the Medical Department of the Army.

Previous courses of this type, conducted in Chicago in 1938 and 1939, met with a most enthusiastic response on the part of those individuals participating in the instruction. The 1939 course was attended by over 100 officers of the Medical Department Reserve Corps, representing 28 states from Maine to California, who gave their time and bore all expenses connected with their attendance as a personal contribution to national defense.

U. S. Post Office Building, Chicago, Ill. Phone: Wabash 9207, Extension 388.

SOUTH SIDE MEDICAL ASSEMBLY OF CHICAGO

The South Side Medical Assembly will hold its annual mid-winter clinical meeting on Wednesday, February 14, 1940. All members of the medical profession are cordially invited to attend all surgical clinics and all lectures. There will be no registration fee.

Program

Morning—Surgical Clinics—Jackson Park Hospital, South Shore Hospital—8:00-11:00 A. M.

Luncheon—Shoreland Hotel—12:00 noon.

Afternoon — Symposiums — Shoreland Hotel — 2:00-5:30 P. M.

MODERN TREATMENT OF UROLOGICAL DISEASES

Gonorrhea in Men—Dr. Patrick McNulty.
Gonorrhea in Women—Dr. Louis D. Smith.
Pyelitis—Adults—Dr. Harry Culver.
Pyelitis—Children—Dr. H. W. Elghammer.

PNEUMONIA—TREATMENT

Clinical—Dr. LeRoy P. Sloan.
Serum—Dr. H. A. Lindberg.
Complications—Dr. Willard Van Hazel.

OBSTETRICS

The Causes and Treatment of Spontaneous Abortion—Dr. Ralph A. Reis.

Diagnosis of Ectopic Pregnancy—Dr. James Bloomfield.

SULPHANILAMIDE AND COMPOUNDS

Reactions and Untoward Effects—Dr. Fred Stenn.

Clinical Uses of Sulphanilamide and Related Compounds in Acute Infectious Diseases—Dr. Archibald Hoyne.

FRACTURES

Upper Extremities—Dr. Frank G. Murphy.
Lower Extremities—Dr. Will Lyon.
Spine—Dr. William Cubbins.

CANCER

The Principles of Radiotherapy in Cancer—Dr. Erich Uhlmann.

Carcinoma of the Stomach—Dr. Arrie Bamberger.
Carcinoma of the Cervix—Dr. Irving F. Stein.
Carcinoma of the Breast—Dr. Arkell Vaughn.
Carcinoma of the Skin—Dr. Herbert Rattner.
Carcinoma of the Rectum—Dr. Charles Drueck.

CARDIAC DISEASES

Coronary Disease—Dr. Henry Barancik.

Hypertension—Dr. George Scupham.

Cardiac Irregularities with Electrocardiographic Interpretations—Dr. Chauncey Maher.

HORMONES

In the Menopause—Dr. Andrew C. Ivy.

In Uterine Bleeding—Dr. John I. Brewer.

In Obesity—Dr. Robert Keeton.

In Certain Urological Diseases—Dr. Herbert Landes.

Dinner—Shoreland Hotel—6:30 P. M.

Evening—Lecture—9:00 P. M.

THE POLYPOIDS OF THE INTESTINES:

Their incidence, relation to carcinoma, and diagnosis.

—Dr. J. A. Bargen, Dr. Harry M. Weber, Mayo Clinic, Rochester, Minn.

Commercial Exhibits.

Scientific Exhibits.

Any information regarding this meeting may be obtained by writing to Dr. Casper M. Epstein, General Chairman, 25 East Washington Street, Chicago.

JOINT COMMITTEE ON HEALTH PROBLEMS IN EDUCATION

NATIONAL EDUCATION ASSOCIATION OF THE UNITED STATES AND THE AMERICAN MEDICAL ASSOCIATION

SYMPOSIUM ON HOW CAN EDUCATION IMPROVE THE NATION'S HEALTH

An open meeting of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, to which all those in attendance at meetings of the American Association of School Administrators are invited.

Time—Wednesday, February 28, 2:00 P. M.

Place—Auditorium of Bishop Tuttle Memorial Hall, St. Louis.

Presiding—Frank Cody, Superintendent of Schools, Detroit, Michigan, and Charles C. Wilson, M.D., Chairman, Joint Committee on Health Problems in Education of the N.E.A. and A.M.A.

Speakers:

1. Viewpoint of the Educational Policies Commission—Superintendent Alexander J. Stoddard, Philadelphia, Pa.

2. What the Private Physician Expects the Schools to Teach—Dr. W. W. Bauer, Director, Bureau of Health Education, American Medical Association.

3. The Contribution of Schools to Individual and Public Health—Dr. Walter H. Brown, Stanford University.

4. Administrative Problems and Procedures in Health Education—Dr. John W. Studebaker, United States Commissioner of Education.

Correspondence

THE ROLE OF STATE MEDICAL JOURNALS IN ORGANIZED MEDICINE*

SAMUEL J. KOPETZKY, M. D.
Editor, New York Medical Week

I know of no peculiar attributes or personal experiences which entitle me to talk to you—my colleagues—with great authority on the subject to which I am called on to respond. I must therefore assume that it is due to my maturity and the experience I have gained in more than eighteen years in the editorship of the *New York Medical Week*. The sole revenge that maturity can take on the rest of you—all editors and secretaries of medical societies—is to preach at you. I have been the victim of innumerable postprandial addresses; I should have mercy in my heart. The after-dinner speech is an American vice, which surely ought not to be unduly encouraged.

However, we are met on a suitable occasion. I shall mix mercy with justice and, if possible, add what I can of wisdom. I shall attempt to be reasonably brief.

We are all interested in state medical journals; we are representatives of the editorial group and as such are presumed effectively to function as editors.

What is an editor? One who edits; one who oversees the selection, preparation and the arrangement of material for publication; one who prepares for use or publication by reviewing, compiling, collecting and correcting; one who has been charged with responsibility of a department of a newspaper or publication; one who writes editorials. Here tonight we are less concerned with these routine duties—we take them in our stride and either competently or indifferently "carry on."

What constitutes an editorial? This is an article in a journal or publication presumably written by the editor or his subordinates and published as an official argument or expression of opinion. It is on this aspect of editorship that I want to concentrate your thoughts and evoke your reactions. The success of a journal or publication is not based so much on its informative articles—although they, too, are im-

*Read before the Dinner Meeting of Editors of State Medical Journals at the Annual Conference of Secretaries of Constituent State Medical Associations, Chicago, Nov. 17, 1939. Jour. A. M. A. Jan. 20, 1940.

portant—as it is on the editorial expression of opinion. The articles are of use to the medical profession by reason of their novelty, their ingenuity or their report of completed research, as well as because of the interest which recorded laboratory data and clinical bedside observations hold for the average run of the medical journal reading public. But only that medical publication reaches distinction, attains prestige and wields influence whose editorial pages make it a journal of opinion. Where you find a great medical journal of opinion, there you invariably find that the printed page reaches the light through the shadows cast on it by a competent editor. An editor is as great as his ability to bring to his readers those facts and opinions which they had but were unable clearly to express. In presenting to them their thoughts anew an editor is great if he can bring them back to his reader in an angle which will cause him to fall into line with the policies of the publication. When done with skill, this may frequently cause the reader to do "an about face."

Among us who are editors of journals, in the interlocking chain of constituent bodies of this great American Medical Association, the editorial message naturally must be based on adopted policy of the organizations we serve. The editor must be anonymous. If his editorial is not unsigned and anonymous, it becomes the opinion only of the one who signed it and, when quoted, it is quoted as his opinion. It is a fundamental formula in democratically controlled and run organizations that the association—the aggregate of its members—and their voice are more important and of higher value than that of any one officer or individual within the organization. So, too, with our publications—the journal itself is greater than any of its editors, and it—the journal—must express itself and it must not express or enhance the editorial writer. If perchance what the editorial page says is good, rings true and carries a potent message, then the journal should be credited, and the journal is quoted and attains prestige.

A real editor—one who knows, lives and feels the worth of his job—rejoices in the glorious anonymity which good editorial writing implies. An editor is presumed to know thoroughly the topic on which he writes. So comprehensive should be his grasp that he should be able to deliver his message in a few pungent paragraphs. It is a truism that the better the mastery of any topic, the less will be the number of words necessary to tell its story. Thus the editorial becomes distinguished and differentiated from an article writen on the same topic. Reiteration is the essence of teaching. Hence it is within the realm of good editorship to repeat in different form-patterns of words the same message over and over again. Truths held sacred, traditions hallowed by time and usage, and policy which is being stressed—these lose nothing in being retold and reemphasized. Every truth and every policy has many facets. One aspect and one elemental factor should be the backbone of each repetition of the editorial comment. As an example in point: Recently the President-Elect, Dr. Nathan B. Van Etten, in his address before the Pittsburgh Academy of Medicine, said, in speaking on The American Way, "The best program for medicine should be the product of the best minds of the American people. I propose that it be written by physicians and when approved by organized medicine that it be submitted to the Congress. I believe that we should try to find an American way—built on the sound foundations of American experience." This we, in New York, will put on our masthead and keep it there during succeeding issues. Editorially we shall reiterate the message this masthead contains, in our endeavor to make it reach the value of a housewhold word.

An editor must be entirely untrammeled and free to express himself. This freedom should range far and wide but not extend beyond the framework of adopted policy. Intramural groups and political blocs must never be favored, one above the other. They must all be tolerated. All must have the editor's sympathetic ear, but no one must control his potent pen. His office must never be used as an intramural stepping stone for the almost unavoidable political groupings and ambitious aspirations of one sector of the membership over that of another, since the whole membership is actually the editor's collective employer. He serves all of them best when he remains an observer, somewhat aloof, intensely sympathetic and yet always beyond intramural politics. Policies are greater than people, and problems always outweigh parties.

Happy indeed is the editor of a state journal who successfully attains such a position among

his fellow members. He must beware lest he be lured by the siren voice of intramural pressure groups who have a vested intellectual and evangelistic interest in some form of public health education propaganda. I am referring to very worthy groups among us, as for example groups interested in the blind, in the deafened and in the control of cancer and of tuberculosis. Such groups send to the public their own particular messages. The editor of our state journal, having won the confidence of his readers, serves them as a guide and must stand between the strenuous special pleaders from these groups and the general run of the profession. In no case should the editor become one of the special pleaders.

The editor must defend traditional policies of the profession against the general public, which often clamors for hasty and unwise change. The editor must know that there are always those who delight in tagging themselves with the label of "progressive" because of an inherent restless desire to bring about change. It remains to be seen whether or not the change is really a progression. At the same time the editorial must be so employed that it must lead the profession itself away from its inbred aversion to any change. The editor must be a courageous leader, and editorially our state journals must stress an appreciation of new situations and new methods to meet them. The age we live in is one of fast movement. The editor must sense the trends of the time in which he is living and must present the trends of his day so that our readers, first the medical profession and secondly the public it serves, will appreciate the changes taking place about us and be prepared mentally by an intelligent awareness of the current situation and thus be able to build new methods and evolve new technics to meet the changing trends of the day. All this must be within the framework of sound proposals and adopted policies.

The end to be achieved by the medical editor goes further than merely to educate both public and profession for cooperation on accepted policies only. He must prepare groundwork, pave new highways, light up darkened avenues of thought for the appreciation of needs for change in policy and in the development of policy. He must do this even though some of these changes are generally felt to be unpopular with the profession at the given moment.

The medical editor should avoid the use of generalities to help him win his fights. Facts and figures are always the best arguments and the editor himself should never be fooled by generalities and slogans. Slogans are the verbal anesthetics which lull intelligent apprehension of factual data into discards. Most slogans are actually trite phrases framed to nullify the necessity for thinking. They are put forward in the effort to have the casual reader substitute them for conclusions arrived at by deductive reasoning. The editor himself must scrupulously avoid employing slogans. If worthy of the editorial pen he wields his readers have a right to expect better things than that from him. The medical editor naturally must be a student of medical affairs. His studies should be almost wholly objective; he should carefully examine every proposal no matter how fallacious or fantastic it may seem. There may be some germ of good in it somewhere, and if such is found, that little good, no matter how small, should be conserved for incorporation in editorial policy. Our constant effort is to bring comprehension of better methods and technics to the profession so that the public welfare is better served.

The editor is the paramount factor in bringing the general public and the medical profession into close copartnership in the endeavor to maintain high standards of medical practice and a high level of public health. Organized medicine needs no subterfuge in exchanging views with the public or in telling the public its stand on current moot questions. The public, represented by its general newspapers and government agencies concerned with public health, is bound to listen to organized medicine speaking in the name of its 115,000 physicians, through *The Journal of the American Medical Association* and our state journals. If we as editors thoroughly understand our jobs and conscientiously perform our duties, mutual confidence will soon become the established order. Organized medicine can speak publicly through our columns in a voice that will be heard and heeded. Organized medicine needs no camouflaged pressure group to lead its fights toward better medicine and higher grades of medical care or even to popularize the development of its technics for delivering medical care to the indigent and the near indigent, who are separated from receiving such care by financial barriers. Organized medicine, free and

unafraid and "in the open," can advocate its own considered judgments on such questions.

But organized medicine must clearly define its medical policy. No body of men, however expert as publicists, can sell "nebulae." We may be told that a nebula consists of an aggregation of exceedingly bright stars, but it takes an expert astronomer and a strong telescope to see even one. You cannot beat a horse with no horse. Our national health policy must be stated plainly; our goal must be set so clearly that all who run may read. It must be broad enough to cover the general medical needs of the whole country and flexible enough to fit every conceivable local situation. This, of course, is in the hands of the policy forming groups in our organizations, and I am sure that they are endeavoring to complete their designated tasks.

The program handed us this morning, the result of the action yesterday of the Board of Trustees, is a step in this direction. I look on it as a fine beginning, the outline of a basic formula for a national health policy which we can back, and which the leadership of the American Medical Association will develop further. I trust to see an endeavor to translate it into enabling legislation so that our states and our state organizations can act under it and make it effective. We as editors, however, definitely need this outlined policy as the framework within which lies our field of endeavor. Our efforts henceforth should be to popularize it and let everyone know our progressive stand.

There should be a paralleling activity on the part of all editors of state medical journals. I am not implying that the editorial impetus along a given line shall come from a central source. But have we not all exactly similar aims? Are not the goals of our endeavors the same? This is true whether we are editors of the journal in Maine or in California, Texas or Illinois. I would that it were possible for each of us to have a preview of what our confrères and colleagues intend to publish, so that each of us might be able to parallel the other. Progress most rapidly follows an intelligent objective discussion and differences of opinion, honestly held but dispassionately expressed. Among us every proposition is debatable within the realm of good taste and the necessary observances of the decencies.

Knowing the policies adopted by organized medicine to meet the changing needs of our times and having foreknowledge of the thoughts of our editorial colleagues in the constituent journals, I feel that we shall be better able to serve organized medicine and more properly fill the role which it is intended that we shall play in the integration of our joint editorial policies; namely, to express the official opinion of organized medicine. All this to the end that American Medicine shall better serve our people.

DISCUSSION

Chairman Drake: This fine address brings up a number of questions. I think the question of editorials is one of the most important we have. To me it is about the hardest part of my work. It is obviously impossible for the average editor to write scientific articles on every specialty. I myself call on individuals who I think are particularly prepared to write on a certain subject. We have never used the policy of buying editorials.

Dr. Frank H. Jackson: The government has used a vast amount of propaganda, both in the press and over the radio, directed against not only the American Medical Association and state medical associations but also men officially connected with them. They picked them out and designated them with smearing tactics. That is decidedly unfair. There are very few people in the United States, comparatively speaking, who read medical journals. We have to transmit what we have learned and heard today to our various state constituents. I want that to get before the people in my state, the public of Maine. I want the man who votes, the man who thinks, who pays the taxes, to know what this Association stands for, that we are not obstructionists and that we are willing to help, no matter what the politician says. Doctor, how are we going to get a liaison? What are we going to do about this? I think it important that we work this out among ourselves.

Dr. Samuel J. Kopetzky, New York: We write an editorial in the state of New York for the state journal. The powers that be in the editorial office and in the council of the state society decide that it is good and accept it. If it has a message which, in their considered judgment, should go further than among the circle of medical men they strike off a release and it is sent to the editors of the big city papers. It is sent around to a list that is kept in the state society's public relations office; thus, it gets out. When the medical profession shows an unbroken rank, send and carry your message to the public. We do it frankly. We frankly label it and there has been neither criticism nor repercussion. We do not sneak it out camouflaged. It comes out in the open frankly, with a heading from this department of our state medical society. In that way, by a continuous effort, we also feel we speak to the public.

Dr. Jackson: You mentioned the large dailies. Those help, of course. What have you done about the small country newspaper that reaches thousands and thousands of people?

Dr. Kopetzky: They are on the mailing list in our state.

Dr. Jackson: What is the reception as a general rule?

Dr. Kopetzky: Good, because it is frank and open. There is no subterfuge propaganda. It is the message of the state society.

Dr. Jackson: Have you yourself seen these editorial fellows and know them, so they can come back and talk to you?

Dr. Kopetzky: I am out of it entirely. I never talk to a newspaper man or know an editor unless I happen to know him outside the field of my work. Anybody who talks to him talks to the official representative of the state society of New York and not to the editor. The editor is finished when he sends in his article, which is to be published anonymously. If it is adopted and accepted, it is the official voice of the society. I never talk to him personally as editor. I never tried to, for fear I might overtalk myself.

Chairman Drake: Any suggestion for the editors for cooperation with the state secretaries? I know that in our state we send out newspaper releases continuously. I don't know whether they ever use any of the editorials in the medical journal or not. It is a good idea.

Dr. E. M. Shanklin, Indiana: Relative to the contact with the lay public throughout Indiana—speaking in an editor sense—we depend entirely on our publicity committee. It sends out 382 releases every week. They go to the newspapers all over the state. They are published and are read.

Dr. Morris Fishbein, Chicago: I have written many editorials in my time, including editorials not only for the Journal of the American Medical Association but also for a considerable number of other publications. Any editorial, to reach the people and to animate them to action, which is the purpose of an editorial, must have fire, must have "go," must have life. Many editorials in medical journals do not have life, do not have fire. You cannot put fire in an editorial by using what used to be called "namby-pamby" words. You must use words that have fire. I think of the fellow who was brought into court by an old woman. He was working with a wire crew back of her house; the fellow on top who was soldering the wire managed to drop a little hot lead, which went down the back of the neck of the boy below, concerning which he made some enthusiastic remarks. She haled him into court and said he had used language such as she had never heard before.

The judge said, "Just what did you say?"

He said, "When that hot lead went down my back I looked up and said 'You oughtn't to do that, Alfred!'"

Every once in a while you must speak strongly. Some people will resent what you have written. They will say "It was not in good taste. He should not have been so strong; it hurt." It was intended to hurt. It was intended to get results; the fact that there was remonstrance shows that it was effective. There have been innumerable books and articles written on the construction of editorials. There is a standard form for an editorial, particularly a scientific editorial. Begin by stating the question. Next discuss the evidence, that is, the data to which Dr. Kopetzky refers. Then draw the conclusion. I believe the *New York State Journal of Medicine* is one of the best journals of medicine published by any of the states. The public relations job which New York is doing now is an excellent public relations job. Some of the other states are also doing excellent public relations jobs. The extent of a public relations job depends entirely on the amount of money you have to spend. With $250,000 a year you can do a better public relations job than you can do with $3,000 a year. Not all of the states can spend on public relations jobs what New York spends. The American Medical Association cannot spend on a public relations job what the United States government can spend on that kind of a job. Nobody can spend on a public relations job what the United States government has spent and is spending on its own public relations. I do not read every editorial in all of the state medical journals, but I read many of them. I go through all of the state medical journals every month as they come out. The improvement that has taken place in state medical journals in the last twenty years is so tremendous that it is almost inconceivable to any one who has not watched the gradual evolution. As to the throw-away medical journals, they should disappear entirely from the medical scene. They represent a cancer in the field of medical publications. The entire medical profession has a responsibility in relationship to these publications. What they print in general is vicious in that they oppose organized action by stimulating discontent. What they do in the way of fostering advertising that is unscientific, in many instances, is vicious if not fraudulent. These magazines appeal to the lowest instincts of their readers. They dish out the kind of material your own state journals would not and could not publish. A periodical which copyrights its material can protect itself against the plagiarism that is involved in lengthy quotations in any other publication. Where they take a few words from an article and rewrite them in their own language there is usually not violation of copyright in my opinion.

Dr. W. Edwin Bird, Delaware: Some years ago, when we were having our journal printed by the largest printer in Wilmington, we got only a moderate amount of quotations of our editorial page. This firm finally failed. When we cast around for another printer, we went to the Star Publishing Company, which prints the Sunday *Star*, the only Sunday newspaper in Delaware. Since that time, practically every editorial that had any local application at all has been reprinted in full.

Dr. Edgar A. Hines, South Carolina: I want to ask about this little word "we" in editorials, when Dr. Kopetzky urged anonymity. Sometimes I don't put it in an editorial at all for a long time and then, by force of habit, I find the little word creeping in. Perhaps I will get General Taylor's journal from Texas and find a "we" in there. I can imagine Holman Taylor, as well as I have known him for twenty-five or thirty years, prancing up and down his editorial offices and stressing this "we" over and over again to several stenographers. But my impression is that the "we" doesn't appear in the editorials of the American Medical Association.

Dr. Fishbein: The style book of the American Medical Association press discourages the use of the word "we" unless the persons represented by "we" are suitably identified. In all scientific writing, identification of the individual is important. When you are discussing editorially the policies of your state medical association and you say "In the Georgia State Medical Association we have recently adopted the policy," that use of the word "we" would be correct because the antecedent's identity is what is meant by the word "we," but suppose you begin an editorial by saying "We oppose all of the actions recently taken by the council of the New York State Medical Society," who is that "we"? That "we" is not identified. That "we" is presumably the writer, possibly the editor of the journal. In other words, the only proper use of the word "we" is when the persons included in this personal pronoun are in the mind of the reader. You will find a long discussion of the various uses of the word "we" in most of the different style books that have been published by presses throughout the country. I would suggest to most editors that you send for the style book of the New York *Times* or of the Chicago *Daily News*, or of the University of Chicago press.

Dr. A. T. McCormack, Kentucky: The late Henry Watterson, who was an authority on editorial writing, said it was all right to say "we" if you were twins or had a tapeworm, if you would put a star and make a statement of the fact at the bottom of the column.

Dr. Kopetzky: I don't want to monopolize the discussion, but I think Dr. Fishbein hit the nail absolutely on the head. There is another angle I just want to add. "We" is used in an editorial whenever the journal speaks in the name of the organization. Editorially, it should never speak in anybody else's name. Consequently the "we" has a place. "We" (the state journal); "We" (the organization in the state of New York) "believe and hold thus and thus"—never "I." The editor should be submerged. In informative reports, clinical reports, articles, lectures and addresses, it is pseudomodesty on the part of the man who is reporting. If he doesn't want to use the "I," why does he write it at all? He has his name on the top of it, and he usually puts on two or three titles if he holds them. We delete all but one, always giving him the most prominent title. When he is reporting literature we give the name quoted, reference, documented; but when he comes to conclusions and says what he specifically does, the reason for the article, why trouble the ear-weary public with his presentation at all? Then he should say "I say so," "I think so," and "I do so and so." I don't believe any rules are better than the rules they have in the Journal, that little slip which comes when you have to correct manuscript, telling you the format. The form in which the American Medical Association and its special journals come out are in a class of medical journals by themselves, just because they all conform to that high standard. The scientific technical editorials that are procured from other sources than the immediate home editorial staff also should not be initialed. If you accept them and you adopt them, they become editorial policy and should come out anonymously. If they are quoted, the journal should be quoted and credited and not the "I. C. A." who signed it. If the I. C. A. is writing something so specific that the editorial board cannot adopt it as its point of view, it should not be in an editorial at all; it should be an individual article signed by the man. Finally, editorials that you buy—we buy editorials—should be rewritten. No matter how bad your style is, if you continually hold it up to your people they will finally like it and get used to it. The whole editorial page should have a certain character, even with all its shortcomings. We can't all be Fishbeins. But they should be rewritten by the editorial staff in the language you want to use to your membership. After a while it sort of becomes like the specific uniform of a regiment. That is the way the state journal looks and that is the way it talks, no matter where the ideas come from.

Dr. Creighton Barker, Connecticut: These gentlemen from the great states of Indiana and New York talk glibly of $250,000 for public relations, and they talk in sort of deprecatory fashion about $3,000. I am under the impression that Dr. Jackson doesn't have $300 for public relations. I know I don't. There is a way you can get at it. It isn't the interesting device suggested by the gentleman from Delaware. Medicine, these days, is good press and I think it is possible to make friends with the press. I take exception to the ivory tower Dr. Kopetzky places himself in, that he is unwilling to talk to the press. I am interested in promulgating the policies of the Connecticut State Medical Society, so on every Friday afternoon I have a press conference, just like the President of the United States. I have three big dailies that come out in 10,000 editions on Sundays, and they are glad to get stuff from me. The country dailies and weeklies get the stuff Fishbein wrote after it has been recast five or six times. They welcome it. It is interesting stuff, but it has to have some zip in it, just as Dr. Fishbein says. If you can bring in something that comes home to them they will publish it. I think you can make friends of the press, and I don't think it costs any money. It takes time. You and I haven't $3,000 or $250,000. All we have is time. You have cast-iron weeklies in Maine, the same as we have in Connecticut. They will like the stuff if you will send it to them, and if you send it regularly in a friendly fashion and kind of bring home the ideas the people want, these cast-iron weeklies will publish it. Don't forget the press conference.

Dr. Peter Irving, New York: I think what Dr. Barker of Connecticut is doing is to do a public relations job without himself being paid for it. He really ought to have more salary than he is getting from his state society for that particular piece of work.

Dr. Frank H. Jackson, Maine: I have talked to a great many editors of small papers. In fact, in Maine we have small papers. We have a paper which oftentimes I hardly think is friendly to organized medicine, even if it is in friend Kopetzky's domain. But I have found this out: that the editor of the small country paper is delighted to have the ideas that organized medicine give him. There are a great many country people who read thoroughly their small weekly paper,

and they believe a great deal in what it says. It is all right to talk about the public relations committee that my friend Kopetzky has in New York. A public relations committee exists in the state association in Maine. I can say it is decidedly inadequate. The only way I know is to do as my friend Barker does, become friendly with these fellows, and when some controversial issue comes out you can get a great deal in an honest way through your combating it.

ALCOHOLICS ANONYMOUS

Chicago, Ill., January 20, 1940.

To the Editor: Of great interest to the medical profession is the new approach to a cure for chronic alcoholism developed by alcoholics themselves.

Every physician has been confronted with the problems of the incurable alcoholic. He who although sobered and apparently sane as a result of medical aid suffers the usual and expected relapse and returns to the physician or to the sanitarium for another round of treatment. In his remorse he solemnly rejects alcohol in any form. He then endures a short period of sobriety and again returns to drunkeness.

Alcoholics are the last to admit their inability to "drink like gentlemen," and therefore are prone to devise ways and means, or systems for indulgence, which although inaugurated with sincere intent at the time seem never to serve their purpose. They act only as the forerunners to bigger and better sprees.

The chronic alcoholic seldom can be cured until he reaches a point at which he admits his inability to cope with his problem and has in addition a sincere desire to achieve complete and lasting sobriety.

The chronic alcoholic resents the efforts made by his relatives and friends to help him. He feels they do not understand him nor his problem. But when he takes to people who themselves have been drunkards he realizes that these people do understand for they have had the same personal experiences.

Upon these principles is based a new organization inaugurated by alcoholics. It had its beginning in New York 5 years ago and is known as Alcoholics Anonymous. It now has members in most of the large cities.

In Chicago it is only 32 strong but is rapidly growing. Many of the members have fine intellects and have held positions of great responsibility which they are regaining.

The growth of Alcoholics Anonymous and its influence on the fraternity of chronic drinkers have been achieved almost entirely through personal contact and through the family physician.

When a drinker recognizes the failure of his own systems for stopping drink and admits his need for help, then and then only can he be helped by the fellowship of other members of the group.

When he is ready the new member goes out with other members in occasional "missionary" work. Each member feels in duty bound to go to the aid of another unfortunate.

No sacrifice is too great. No pay is accepted or wanted. In trying to save others the alcoholic saves himself.

The principles of Alcoholics Anonymous do not conflict in any way with religious sects or creeds. The organization is not in any sense a "racket."

There are no officers, no dues and no costs whatever. The only requirements for admission to Alcoholics Anonymous are a sincere desire to get rid of the alcoholic habit and willingness to help others so addicted.

Further information may be had by directing inquiries to Alcoholics Anonymous in care of this publication.

THE EXPENDITURES FOR AUGUST AND SEPTEMBER, 1939, OF 512 FAMILIES OF THE CHICAGO RELIEF ADMINISTRATION

A Study by The Elizabeth McCormick Memorial Fund with the Cooperation of Twenty-Four Participating Agencies

Summary. Detailed information was obtained by personal interviews with 512 C.R.A. families in regard to their expenditures for a period of one month during August and September when relief allowances were 65 per cent. of budgeted

Made at the request and under the auspices of the Health Division, Council of Social Agencies of Chicago, November, 1939.

For copies of the study address Council of Social Agencies of Chicago, 203 North Wabash Avenue.

items. A summary of the findings and conclusions from a study of the collected data follows.

1. The 65 per cent. allowance on budgeted items was totally inadequate to meet family needs. Sixty-one per cent. of the families spent less than one-half as much money for food as is needed for an adequate diet at minimum cost. Eighty-two per cent. paid more for rent than the amount allowed. Slightly under two-thirds of the families paid half again as much for rent as the amount allowed for that purpose. Fifty-four per cent. paid more than allowed for fuel. Light, cleaning supplies, and clothing were purchased although allowances for these items were made in only a small number of cases. Excesses in rent and fuel and unbudgeted expenditures were met at the expense of the food allowance or by going into debt. Fifty-three per cent. of the families were in debt for rent, 45 per cent. for food, 29 per cent. for light, 25 per cent. for cooking fuel, 3 per cent. for ice, and 3 per cent. for clothing.

Evidence strikingly points to the fact that in the majority of families there were unmet needs which might have serious consequences for health and welfare if the drastic curtailment continued.

2. The allowance of 80 per cent. of the budget effective since November 5 is likewise inadequate. Grants for budgeted items still are not sufficient to meet minimum requirements, and the budget still does not provide for all essential needs of the family.

3. Evidence points to the fact that unless adequate allowances are granted for budgeted items and for essentials not now budgeted, the adequacy of the present food allowance will continue to be threatened since it must be drained off to meet the other needs. Even though the 80 per cent. allowance for food supplemented by the milk which is now being distributed approximates the amount necessary for a minimum adequate food budget, in reality it falls far short of this since it must provide for other family needs. The distribution of surplus commodities which has made a contribution to family food needs does not sufficiently supplement the food allowance to insure families against serious food inadequacy so long as inroads are made to meet other needs. Surplus foods are an undependable item as they vary greatly in amount and kind. Furthermore, their inclusion in determining the food budget standard is against the ruling of the Federal Surplus Commodities Corporation.

4. The chief strain upon the food allowance comes from the expenditure for shelter. As previously stated, during August and September 82 per cent. were paying more than the amount allowed—almost two-thirds of them half again as much as the allowance. The greater the percentage of families paying the higher rents, the smaller the percentage having larger proportions of their food allowance available to feed the family. If with the increased allowance the same rent is paid as during August or September, 74 per cent. will still pay more than the allowance for this purpose.

5. The findings of the study indicate the desirability of a reconsideration of the rent budget. For a large proportion of the families the budget estimate for rent seems to fall drastically below the actual amount required. Unless the amount budgeted approximates realistically what clients must pay for shelter even the full allowance will not be sufficient for this item.

6. A sampling study of types of meals served indicates a dangerously low nutrition level. Seventy-nine per cent. had too little milk and 70 per cent. an amount of fruits and vegetables so small as to endanger health. The plan of milk distribution which went into effect November 13 will notably contribute to improvement in the first deficiency. Correction of the latter will depend largely on safeguarding the food allowance against inroads to meet other expenditures. *Such protection cannot be assured unless allowances are granted for all actual necessities as well as for food at a level representing* 100 *per cent. adequacy.*

7. Dietary studies among various segments of the population, especially at the relief and other low-income levels, have disclosed deficiencies similar in character and amount to those presented for this group of families. These lacks in essentials for good nutrition are matters of concern in terms of their probable ultimate effect upon the health of the population. The cause of such deficiencies is, of course, to be

found partially in a lack or shortage of funds to provide the necessary foods, but also in a lack of fundamental knowledge concerning their importance to health. Interviewers reported that even at the same budgetary level, parents differed in the ability with which they met the problem of how to provide food for their families. In terms of relative values probably those mothers were wisest who attempted to provide for nutritional needs by spending proportionally larger amounts for food than for other items, even to the point of meeting rent and other expenses only in part.

It has been established that only with a high degree of intelligence concerning planning, buying, and preparation of food can families be properly fed on a minimum adequate allowance. This ability is often lacking in the population as a whole, but when there is a margin of money available to balance waste and lack of judgment, the results may not be serious. A minimum adequate budget cannot allow for such a margin; therefore, families on low-income levels must spend all funds as economically as possible. This points to the importance of education concerning the wise use of the funds available to families to safeguard the health of children and adults.

Study of the Expenditures for August and September, 1939, of 512 Families of the Chicago Relief Administration

Since July 1936, relief in the City of Chicago has been administered under legislation passed by the Second Special Session of the 59th General Assembly, amending the Illinois Pauper Law, which was originally passed in 1874. In June, 1939, the Illinois Emergency Relief Commission recommended to the 61st General Assembly, then in session, that funds be appropriated in suffcient amounts to provide for what it estimated to be the minimum needs of persons who qualify for aid under the provisions of the law. Appropriations which were made, however, represented only about two-thirds of the amount recommended as needed, and reductions in expenditures were necessary in the various governmental units of the State, including the Chicago Relief Administation. These reductions came at a time when because of already inadequate funds, relief grants for Chicago for a period approximating a year had been seriously curtailed.

Status of Relief under C.R.A. during the Fifteen Months Prior to November 5, 1939. At no time since September 3, 1938, have C.R.A. relief recipients received the full amount of the relief budget. From September 3, 1938, to May 3, 1939, 85 per cent. of the budgets were granted; in May, 75 per cent., in June, 80 per cent., and from July 3 to November 5, 65 per cent. Even the full relief budget provides regularly only for rent, fuel for heating and cooking, and food, and only minimum amounts for these items. Upon the request of physician the food budget may be supplemented by an allowance for a therapeutic diet. While medical care is not budgeted, it is provided on the basis of need. Expenses not regularly budgeted but allowed when the absolute need is evident include burials; moving expenses; certain essential household equipment such as beds and stoves; and carfare when required for attendance at school, clinic or work.

Clothing is budgeted only for the members of the family who may be employed on Work Relief or who are earning part of their budget in W.P.A., or in private industry. Other clothing needs are met in part by garments made by the W.P.A. Sewing Project, but this does not provide coats, suits, warm underwear or stockings. In some instances clothing not provided in this way may be purchased out of a special grant which is totally inadequate. Some shoes are provided but not enough to meet the needs.

There is no provision for personal incidentals or cleaning supplies and very little for replacement of household equipment and furnishings other than those previously mentioned. At the time the data for the present study were assembled, electricity was furnished only to a very few families with small children or with illness in the home.

Comparison of Relief Standards in Chicago with Those of Other Large Cities. In the *Monthly Bulletin on Relief Statistics* of the Illinois Emergency Relief Commission of September, 1939, in connection with material on budget standards and practices in Illinois during October, 1938, the following table is presented which compares public relief in Chicago with that in seven large cities in the United States.

COMPARISON WITH CHICAGO OF RELATIONSHIPS OF MAXIMUM AMOUNTS* BUDGETED BY PUBLIC RELIEF AGENCIES FOR SIX ITEMS FOR A FOUR-PERSON FAMILY, SEVEN LARGE CITIES IN THE UNITED STATES, OCTOBER, 1938.

Item	Average	New York	Chicago	Philadelphia	Detroit	Cleveland	St. Louis	Pittsburgh
Total	110.5	126.0	100.0	101.2	115.4	....†	126.7	93.7
Food	96.9	99.1	100.0	95.2	101.5	89.8	99.1	93.5
Shelter	115.8	137.7	100.0	87.8	146.8	....†	144.3	78.4
Fuel for heating	158.7	234.2	100.0	....‡	86.1	154.6	215.7	...‡
Fuel for cooking	113.1	106.6	100.0	....‡	93.0	111.7	154.5	...‡
Light	102.8	78.4	100.0§	....‡	104.7	105.6	125.8	...‡
Household supplies¶	....	....	....	....	....	....	....	....	....
Gas, light, coal	167.9	219.2	100.0	169.1	119.9	173.6	235.2	158.8

*Adjusted for intercity differences in price levels.

†Amounts budgeted for shelter not available.

‡Reported as gas, light, and coal combined (see last line for comparison).

§Not budgeted but usual maximum amount used for comparison.

¶Not budgeted by Chicago Relief Administration.

It will be noted that at that time Chicago's standard food budget was practically the same as that of New York City, Detroit, and St. Louis and somewhat higher than the other cities reported; but that for the item of "shelter" New York City was 38 per cent. higher, Detroit 47 per cent. and St. Louis 44 per cent. higher than Chicago, the average for the seven cities being 16 per cent. higher than Chicago's shelter budget. Even more pronounced discrepancies are indicated in the items for heat and light, all cities in the group being higher than Chicago, the lowest being 20 per cent. higher than Chicago and the highest being 135 per cent. higher. These figures relate to a period when the actual allowance in Chicago was 85 per cent. for items which were allowed rather than 100 per cent. which was used as the basis for this table.

Plan for Securing Factual Evidence. A deep concern as to the probable effect of curtailment of relief budgets upon the health of the people involved led the Health Division of the Council of Social Agencies of Chicago to appoint a subcommittee to consider the assembling of pertinent information. Material available to this subcommittee on the expenditures of a small number of C.R.A. families seemed to indicate the value of a larger study as factual evidence of the needs of people on relief. It was agreed that under the general auspices of the Health Division, the Elizabeth McCormick Memorial Fund would undertake such a study with the participation of other agencies also in touch with large numbers of C.R.A. clients in securing data from families and in formulating the general plan.

Plans for the type of inquiry were made jointly by representatives of the Chicago Relief Administration, the Coordination Committee and the Clinic Section of the Health Division of the Council of Social Agencies of Chicago, the Douglas Smith Fund, the Elizabeth McCormick Memorial Fund, and the Infant Welfare Society. The form prepared by this group as a basis for the study is appended, together with an explanatory statement and instructions submitted to all the participating agencies.

It was decided that the data would be secured from a responsible member of the family through interviews either at a clinic or in the home, including as wide a distribution of families throughout the city and as large a number as the time allotted to the study would permit. Participating agencies would then submit the data to the McCormick Fund for tabulation and interpretation.

In addition to the agencies already referred to, further cooperation was secured in assembling information on families through the Public Health Nursing Service of the Chicago Board of Health and through a number of social settlements. A complete list of individual agencies participating is appended.

Full cooperation was given by the Commissioner of Relief in making available all information requested from the Chicago Relief Administration.

The report here presented is an analysis of the expenditures during August or September, 1939, of 512 C.R.A. families when the relief granted was 65 per cent. of the standard relief budget. Seven hundred and forty-four families were interviewed by nurses, social workers, and nutritionists on the staffs of the agencies cooperating in the study. Information was secured regarding the amount spent during the month pre-

vious to the interview for food, rent, and other necessities, the kinds of meals served, and the amounts of foods purchased. Information complete enough to be tabulated was secured on 512 families ranging in size from one to fourteen 24 per cent. of whom were Negro. The findings summarized in tables and charts will be found in the appendix.

General Findings of the Study. The analysis of the expenditures of 512 families indicated that in a large proportion of the cases, money intended for food was being used for the more fixed items of expense such as rent and fuel for cooking and lighting, as well as for other living expenses for which insufficient provision was made in the relief allowances.

Reference to a specific family budget will perhaps prove helpful in clarifying the distinction between the use of the words, "budget" and "allowance" as used by the relief agency and as found in the following discussion. The C. family is composed of a father, mother and two children, a boy of fifteen and a girl of thirteen. The standard relief *budget* for the family is as follows: rent $20,00, fuel for cooking $2.25, and food $33.91, making a *total budget* of $56.16. During the period of the study the relief *allowance* was 65 per cent. of this amount or $36.50.

The major expenditures during August or September of the families surveyed are briefly summarized in Table I. During the month preceding the interview 82 per cent. of the families spent *more* for rent than the amount allowed; 54 per cent. spent *more* for cooking fuel than allowed; 56 per cent. spent *more* for light than allowed. In only 13 cases among the 512 was light allowed. For *food* 84 per cent. spent *less* than the food allowance, an allowance which was only 65 per cent. of a minimum adequate standard.

Rent. An outstanding fact revealed by the study is that 89 per cent. of the families paid all or part of their rent. Three per cent. of the families lived with relatives and were not budgeted for this expense. Not only did 82 per cent. pay more for rent than the amount allowed, but 64 per cent. paid more than half again the amount allocated for this purpose. The effects of living on a curtailed allowance for a long period are evident in the fact that 53 per cent. owed rent for the month of the study or previous months, 14 per cent. owing for more than three months. That such a large percentage of the families studied were paying rents in the face of drastic cuts in the relief budgets reflects the fear of eviction which was repeatedly stated to the interviewers. Apparently this fear is more pressing than the fear of malnutrition with its subsequent ill effects.

Relation between Rent and Food Expenditures. The relation between the money spent for rent and that spent for food is indicated in Table 2. The larger the proportion of the budget spent for rent, the smaller the amount spent for food. When the adequacy of food expenditures of families who paid more than was allowed for rent is compared with that of families who paid less than was allowed for rent, it is strikingly evident that rent was paid at the expense of food. Sixty-nine per cent. of the families who paid more than allowed for rent had less than half enough money to purchase a minimum adequate diet. Only 4 per cent. of the families who paid more than allowed for rent spent as much as 80 per cent. of the minimum adequate amount for food.

Adequacy of Food Expenditures. The amount of money spent by families for food was compared with the C.R.A. standard food budget. This is the minimum amount on which adequate nutrition can be assured and only if the necessary factors are provided by the least expensive foods. Of the 512 families only 14, or 3 per cent., had within 10 per cent. of this amount, as shown in Table 3. Sixty-one per cent. had less than one-half as much money as needed for a minimum adequate diet.

Effect of Surplus Foods on Adequacy of Food Expenditures. Since families on relief receive surplus commodities distributed by the federal government, the monetary value of these foods was added to the money available for food in another comparison. For this purpose it was assumed that all families received the maximum amount of the surplus foods distributed although in actual practice this was not the case. The most optimistic picture is thus presented. As shown in Table 3, the situation is then improved but is still far from satisfactory. Nine per cent. of the families, as against 3 per cent. when surplus foods are not considered, then had within

10 per cent. of the amount necessary for an adequate diet. Thirty-two per cent. with surplus foods added, as against 61 per cent. without them, had less than one-half the amount necessary for minimum adequacy.

Shortage in Types of Food. The inadequate amount of money available for food showed itself in a shortage of protective foods, as indicated in Table IV. These are the foods which supply elements essential for the growth of children and for health at all ages. A diet deficient in protective foods for a prolonged period must eventually result in bodily impairment.

Milk was used in insufficient amounts by the majority of the families, as based on the analysis of a week's purchases of pasteurized, evaporated and dried milk. According to accepted standards, at least a pint of milk is needed daily by each person and more is desirable for children. Seventy-nine per cent. of the families had less than a pint of milk daily for each person. Thirty-seven per cent. had less than one glass of milk daily per person. Four per cent. had no milk at all.

Authorities agree that at least three servings daily of fruits or vegetables including potato are necessary for the maintenance of health. Thirty per cent. of the families had this minimum amount. Thirty-one per cent. had only two servings, 24 per cent. had one, and 15 per cent. had none at all. According to these findings, *70 per cent. of the relief families had an amount of fruits and vegetables so small as to endanger health.*

Meat, fish and eggs provide good quality protein as well as other nutritive factors that may be lacking, particularly if the diet is low in milk. Nutrition authorities recommend at least one serving of meat, fish, or eggs daily. The meals of 30 per cent. of the families failed to meet this standard. This comparatively good record is probably due at least in part to the fact that eggs were a surplus commodity during the months the data were assembled.

These findings indicate that some form of malnutrition would be inevitable for these relief families if the limited expenditures for food were to continue, for *even when compared with an extremely low standard over three-fourths had too little milk and seven-tenths had too few vegetables and fruits.*

(*To be continued*)

HIGH LIGHTS IN THE HISTORY OF CHICAGO MEDICINE

(Author's Abstract)

Chicago, Ill., Jan. 17, 1940.

To the Editor:

An index of the state of culture of any community is the state of medicine in it. From that standpoint a glimpse of the history of medicine of Chicago should have some interest.

The history of Medicine in Chicago begins with the beginning of Chicago. There was a doctor here when Marquette spent the winter of 1674-5 and there have been doctors here ever since when there have been whites here. Dr. Smith came in with Capt. Whistler's troops, under Lieut. Swearingen in 1803, and Dr. Van-Voorhees was killed in the massacre of 1811. There were excellent men here during all of the occupation of Fort Dearborn, but the real history of Chicago medicine begins with the incorporation of the city in 1833.

God forbid that I should try to sketch the entire history of Chicago medicine in a friendly address, but I can indicate its status by a few men who have represented Chicago medicine at its best from 1835 to the present time. The men that I select as the Chiefs are:

Daniel Brainard, from 1835 to 1866.
John Evans, from 1845 to 1858.
N. S. Davis, from 1849 to 1904.
John H. Rauch, from 1857 to 1894.
Christian Fenger, from 1878 to 1902.
Frank Billings, from 1861 to 1932.
Ludvig Hektoen, from 1887 to the present.

Under the leadership of these men Chicago medicine has always met its responsibilities, not only its local responsibilities but its reponsibilities in the development of the science and art of medicine, in medical education, in hospitals, in research and in sanitation and public health. The cultivation of research in Chicago has resulted in a remarkably fine harvest in our generation. The work of Ricketts in Rocky Mountain Spotted Fever and Typhus, of the Dicks in Scarlet Fever, of Maud Slye in Cancer, of Luckhardt in anesthesia—to mention only epochal achievements—stamps Chicago as one of the most fruitful centers of medical study. Chicago medicine has been outstanding in its leadership in the management of the infectious diseases, particularly typhoid fever. The results are shown in the health record of the city at the present time: today and for many years Chicago has been in this respect one of the cities of the world.

DEPARTMENT OF PUBLIC HEALTH

SPRINGFIELD

To the Editor:

In view of the wide prevalence of and high mortality from pneumonia and the considerable value of anti-serum and sulfapyridine in the treatment of patients, both anti-serum and sulfapyridine are distributed free by the State Department of Public Health to physicians who are willing to meet certain reasonable requirements.

These requirements include the typing in an approved laboratory of the pneumonia in each patient for whom either anti-serum or the drug or both is requested and the rendering of reports by the physicians to the Department on the use of the therapeutic agents and the apparent results.

Anti-serum and sulfapyridine may be obtained from any one of 20 serum centers located at strategic points throughout the State. Typing is done at these serum centers and also at any one of 123 approved typing stations well scattered throughout the State. The typing is done free in any of the public laboratories, but a charge is made for typing in all private laboratories.

I enclose herewith a copy of the regulations and a copy of the list of serum centers and of approved typing stations as of January 1, 1940. You may wish to publish this matter in an early issue of the JOURNAL for the information of the profession.

Very truly yours,

A. C. Baxter, M. D.,

Director of Public Health.

REGULATIONS GOVERNING FREE DISTRIBUTION OF ANTIPNEUMOCOCCIC SERUM AND SULFAPYRIDINE BY ILLINOIS STATE DEPARTMENT OF PUBLIC HEALTH 1939-1940

1. Antipneumococcic rabbit serum in 50,000 unit vials for all types of pneumococcic pneumonia will be supplied without cost to the patient.

2. Antipneumococcic rabbit serum in 50,000 unit vials for types: 1, 2, 3, 4, 5, 7, 8, 14, 19 is to be kept in stock at all established serum centers. Serum for all other types may be obtained by having the approved typing stations telephone (Seeley 1463) or telegraph (prepaid) the Chicago office of the Illinois Department of Public Health, Section of Pneumonia Control, 1800 West Fillmore Street, Chicago, Illinois. The physician's personal request cannot be accepted without confirmation of the approved typing station.

3. Two hundred thousand (200,000) units will be issued for all Type II and III cases. One hundred thousand (100,000) units will be issued for all other cases. At least double this amount should be requested in cases of multiple lobe involvement, bacteremia, pregnancy or first week puerperium, purulent infections or age beyond 45. If the physician requests more serum than the above, it will be necessary to have the sputum retyped for check diagnosis.

4. Twenty-five (25) gm. of sulfapyridine may be acquired for each case of typed pneumonia. Sulfapyridine will be issued on the same basis on which serum is issued. One half of the basic serum dose may be used for all cases of early uncomplicated pneumonias where sulfapyridine has been started. THERE WILL BE NO SUPPLEMENTARY SULFAPYRIDINE ISSUED FOR AN INDIVIDUAL CASE OF PNEUMONIA.

5. In order to obtain serum or sulfapyridine, the sputum or other specimen from a pneumonia patient must be typed in a laboratory approved by the Illinois Department of Public Health for pneumonia typing.

6. A request for serum or sulfapyridine must be filled out in the official form provided and must accompany the specimen submitted to the laboratory.

7. Because of the emergency involved, the specimen should be presented by the physician or a messenger who will wait for the typing to be done and then take the laboratory report together with the original request card to the nearest serum center for issue of the appropriate serum or sulfapyridine.

8. SERUM WILL BE ISSUED ONLY FOR THE TYPE FOUND IN THE SPECIMEN AND SULFAPYRIDINE WILL BE ISSUED FOR PROVEN CASES OF STREPTOCOCCIC PNEUMONIA, FRIEDLANDER'S PNEUMONIA, AS WELL AS PNEUMOCOCCIC PNEUMONIA.

9. By availing himself of the pneumococcic typing service offered, whether serum is actually used or not, the physician obligates himself to submit a Physician's Pneumonia Case Report on a blank supplied by the typing laboratory.

10. All unused vials of serum and tablets of sulfapyridine should be promptly returned to the serum center from which obtained. The physician is requested not to open a package of serum until just before using it. An opened package of serum cannot be re-issued.

PNEUMONIA SERUM AND LABORATORY TYPING SERVICE

Jan. 1, 1940.

Rabbit serum and sulfapyridine for the treatment of all types of pneumococcus pneumonia are now available from the Illinois Department of Public Health *free* to the physicians if the typing is done in a laboratory approved for that purpose by the Department. Continuous day and night service is maintained at all *serum centers*. Typing is done free at the state and municipal laboratories. All other laboratories make a charge. Physicians are asked not to request serum unless the typing has been done in an approved laboratory nor for patients ill with pneumonia for more than 96 hours. Serum centers and typing stations now ready to function are listed below:

SERUM AND TYPING

Bloomington—*Health Department, Bloomington.

Carbondale—*State Diagnostic Lab., Normal Univ.

Champaign—*State Diagnostic Lab., 307 S. Wright St.

Chicago—*Chicago Board of Health, 54 West Hubbard St.

Chicago—*State Diagnostic Lab., 1800 W. Fillmore St.

Chicago—Billings Memorial Hospital, 950 E. 59th St.

E. St. Louis—*East Side Health District, 325 E. Broadway.

Effingham—St. Anthony's Hospital, Effingham.

Evanston—*City Health Department, 1806 Maple Ave.

Evanston—Evanston Hospital Lab., 2650 Ridge Ave.

La Salle—Hygienic Institute, La Salle.

Moline—Lutheran Hospital, 502 Fifth Ave.

Oak Park—*City Health Department, Euclid Ave. at State.

Oak Park—West Suburban Hospital, 518 N. Austin.

Olney—Olney Sanitarium, 606-610 E. Main St.

Peoria—*Methodist Hospital, 221 Glen Oak St.

Qincy—Soldiers and Sailors Home, Quincy.

Rockford—Rockford Hospital, Court & Chestnut St.

Springfield—*State Diagnostic Lab., Capitol Building.

Waukegan—Victory Memorial Hospital, 1324 Sheridan Road.

DOWNSTATE—TYPING ONLY

Alton—Alton Memorial Hospital, Rock Springs Drive.

Alton—St. Joseph's Hospital, Oak & 5th Sts.

Aurora—Copley Hospital Lab., Lincoln & Weston Ave.

Aurora—St. Joseph Mercy Hospital, 421 N. Lake St.

Belleville—St. Elizabeth's Hospital Lab., 328 W. Lincoln.

Belvidere—Highland Hospital, 1625 S. State St.

Belvidere—St. Joseph's Hospital, Belvidere.

Bloomington—Markowitz Clinical Lab., Bloomington.

Bloomington—Mennonite Hospital, 807 N. Main St.

Bloomington—St. Joseph's Hospital, 824 W. Jackson.

Cairo—St. Mary's Hospital Lab., 2025 Walnut St.

Canton—Coleman Clinic, 24 N. Main St.

Champaign—Burnham City Hospital, 310 E. Springfield.

Danville—Lake View Hospital Lab., 312 N. Logan Ave.

Danville—St. Elizabeth's Hospital Lab., 602 Green St.

Decatur—Decatur & Macon County Hospital, End of N. Edward St.

Decatur—St. Mary's Hospital Lab., 220 S. Webster St.

DeKalb—DeKalb Public Hospital, 719 S. First St.

DuQuoin—Marshall Browning Hospital, 800 N. Washington St.

E. St. Louis—Christian Welfare Hospital Lab., 1509 Illinois Ave.

E. St. Louis—St. Mary's Hospital Lab., 129 N. 8th St.

Elgin—Elgin Municipal Lab., Elgin.

Elgin—Sherman Hospital, 934 Center St.

Elmhurst—Elmhurst Community Hospital, 189 Avon Rd.

Freeport—C. L. Best Laboratory, 3 E. Stephenson.

Freeport—Deaconess Hospital, 420 S. Harlem.

Freeport—St. Francis' Hospital, 1209 S. Walnut.

Galesburg—*State Lab., Cottage Hospital.

Geneva—Community Hospital Lab., Geneva.

Highland—St. Joseph's Hospital Lab., Highland.

Jacksonville—Our Saviour's Hospital Lab., 446 E. State St.

Joliet—St. Joseph's Hospital Lab., 426 N. Broadway.

Joliet—Silver Cross Hospital Lab., Eagle & Walnut Sts.

Kankakee—St. Mary's Hospital, Kankakee.

Lincoln—St. Clara's Hospital Lab., 6th & Maple.

Litchfield—St. Francis' Hospital Lab., Litchfield.

Macomb—Roscoe Millet Lab., 120½ S. Side Square.

Moline—Moline Public Hospital, 7th St. & 10th Ave.

Normal—Brokaw Hospital, Franklin Ave.

Ottawa—Ryburn Memorial Hospital Lab., 701 Clinton St.

Pana—Huber Memorial Hospital Lab., Pana.

Peoria—John C. Proctor Hospital, 2nd & Fisher St.

Pittsfield—P. V. Dilts, M.D. office, 101½ E. Washington.

Quincy—Blessing Hospital Lab., 1000 Spring St.

Quincy—Frank Cohen, M.D. Clin. Lab., Quincy.

Quincy—Quincy Clinic Lab., 1416 Maine St.

Quincy—St. Mary's Hospital Lab., 1400-1500 Broadway.

Robinson—Brooks & Teasley Lab., New Otey Building.

Rockford—*Rockford Health Department, City Hall.

Rockford—St. Anthony's Hospital, 1401 E. State St.

Springfield—St. John's Hospital Lab., 7th & Mason Sts.

Springfield—Springfield Hospital Lab., 1201 N. 5th St.

Sterling—Sterling Public Hospital Lab., 1701 1st Ave.

Streator—St. Mary's Hospital Lab., 615 S. Bloomington

Sycamore—Sycamore Municipal Hosp. Lab., 615 Somonauk St.

Taylerville—St. Vincent's Hospital, Taylerville.

Urbana—Mercy Hospital Lab., 1412 W. Park.

Watseka—The Iroquois Hospital, S. Fourth St.

Waukegan—St. Therese's Hospital Lab., W. Washington St.

CHICAGO AREA—TYPING ONLY

Berwyn—Berwyn Hospital, 3245 S. Oak Park Ave.

Blue Island—St. Francis' Hospital Lab., 12948 S. Gregory St.

Chicago—

Abel Laboratories, Inc., 7 W. Madison.

Acme Clinical Laboratory, 7910 S. Cottage Grove.

American Hospital, 850 W. Irving Park.

Augustana Hospital Lab., 411 Dickens.

Belmont Hospital, 4158 Melrose Ave.

Central X-ray Clin. Lab., 58 E. Washington.

Century Medical Lab., 7937 Cottage Grove.

Chicago Memorial Hospital, 660 Groveland Pl.

Chicago Municipal T. B. San., 5601 N. Pulaski Road.

Children's Memorial Hospital, 707 Fullerton.

Clinical Laboratory, 1180 E. 63rd.

Cook County Hospital, Wood & Harrison Sts.

Edgewater Hospital Lab., 5700 N. Ashland Ave.

Englewood Hospital Lab., 6001 S. Green St.

Evangelical Hospital, 5421 S. Morgan St.

Franklin Blvd. Hos. Lab., 3230-40 W. Franklin.

Garfield Park Community Hos., 3813-25 W. Washington.

Grant Hospital Lab., 551 Grant Place.

Holy Cross Hospital, Chicago.

Illinois Central Hos. Lab., 5800 Stony Island.

Illinois Masonic Hospital, 836 Wellington St.

Irving Park Clin. Lab., 4013 Milwaukee Ave.

*Laboratories doing free typing service.

Jackson Park Hospital Lab., 7531 Stony Island.
Kaplan, Maurice I., M. D. Lab., 4010 W. Madison St.
Little Company of Mary Hospital, 95th St. and California.
Lincoln Gardner Lab., 30 N. Michigan Ave.
Loretta Hospital, 645 South Central Ave.
Lutheran Deaconess Hospital Lab., 1138 N. Leavitt St.
Lutheran Memorial Hospital, 1116 N. Kedzie Ave.
Mercy Hospital Lab., 2537 Prairie Ave.
Michael Reese Hospital Lab., 2839 Ellis Ave.
Molay Medical Lab., 185 N. Wabash Ave., Rm. 1125.
Moore Clinical Lab., 55 E. Washington St.
Mother Cabrini Hospital, 1200 West Cabrini.
Mt. Sinai Hospital Lab., 2750 W. 15th Pl.
John B. Murphy Hospital, 620 Belmont Ave.
Norwegian-American Hosp. Lab., 1044 N. Francisco.
Osteopathic Clinical Lab., 5200 S. Ellis Ave.
Passavant Hospital Lab., 303 E. Superior St.
Presbyterian Hospital Lab., 1753 W. Congress St.
Provident Hospital, 426 E. 51st St.
Ravenswood Hospital Lab., 1931 Wilson Ave.
Research & Educational Hospital, 1819 Polk, U. of I.
Roseland Community Hospital, 45-67 W. 111th St.
St. Anne's Hospital Lab., 4950 Thomas St.
St. Anthony de Padua Hosp. Lab., W. 19th St. & Marshall.
St. Elizabeth's Hospital Lab., 1431 N. Claremont.
St. Joseph's Hospital Lab., 2100 Burling.
St. Luke's Hospital Lab., 1439 S. Michigan Ave.
St. Mary of Nazareth Hosp. Lab., 1120 N. Leavitt St.
Scientific Pathological Labs., 6 N. Michigan Ave.
South Shore Hospital, 8015 S. Luella.
South Shore Medical Lab., 2937 E. 79th St.
Swedish Covenant Hosp. Lab., 5145 N. California Ave.
Washington Blvd. Hosp. Lab., 2449 Washington Blvd.
Wesley Memorial Hospital Lab., 2449 S. Dearborn St.
Women's & Children's Hospital, 1606 W. Maypole.
Woodlawn Hospital Lab., 6058 Drexel Ave.
Evanston—Church St. Clin Lab., 636 Church St.
Evanston—North Shore Clinical Lab., 636 Church St.
Evanston—St. Francis' Hospital Lab., 355 Ridge Ave.
Highland Park—Highland Park Hospital Lab., 650 Homewood Ave.
Melrose Park—Westlake Hospital Lab., 612 N. 12th Ave.
Oak Park—Lewis R. Hill Clinical Lab., 1011 Lake St.
Oak Park—Oak Park Hospital Lab., 525 Wisconsin Ave.

DEPARTMENT OF PUBLIC HEALTH

SPRINGFIELD

To the Editor:

We are attaching two lists of newly approved laboratories for publication in your journal.

One lists the laboratories approved for Kahn and gonococcus tests and the other the laboratories approved for pneumonia typing.

LABORATORIES APPROVED FOR PRE-MARITAL TESTS AS OF JANUARY 8, 1940

Carle Hospital Clinical Laboratory, 602 W. University, Urbana.
*Laboratories of the Chicago Lying-In Hospital, 5848 Drexel Avenue, Chicago.
*Seymour J. Cohen, M.D., Laboratory, 185 N. Wabash, Chicago.
*The Iroquois Hospital Laboratory, South Fourth St., Watseka.
Jefferson Park Hospital Laboratory, 1400 W. Monroe St., Chicago.
*Norbury Sanatorium Laboratory, 1631 Mound Ave., Jacksonville.
*Out Patient Department, U. of C. Clinics, 950 E. 59th St., Chicago.
St. Joseph's Hospital, 824 W. Jackson, Bloomington.
St. Therese's Hospital Laboratory, W. Washington St., Waukegan.
St. Vincent's Hospital Laboratory, 423 S. Walnut St., Taylorville.
Sherman Hospital Laboratory, 934 Center St., Elgin.
*South Shore Hospital Laboratory, 8015 S. Luella Ave., Chicago.
Southtown Clinical Laboratory, 6858 S. Halsted St., Chicago.
Woodruff Clinic Laboratory, 250 N. Ottawa St., Joliet.

LABORATORIES APPROVED FOR PNEUMONIA TYPING AS OF JANUARY 8, 1940

Loretto Hospital Laboratory, 645 S. Central Ave., Chicago.
Marshall Browning Hospital Laboratory, 800 N. Washington St., DuQuoin.
Mother Cabrini Hospital Laboratory, 1200 Cabrini St., Chicago.
Passavant Memorial Hospital, 512 E. State St., Jacksonville.
St. Charles Hospital Laboratory, New York and Fourth Sts., Aurora.

Approved for Kahn & Gc Tests

Tower Clinical Laboratory, 6 N. Michigan avenue, Chicago.

Approved for Pneumonia Typing

Evangelical Deaconess Hosp. Laboratory, 7th and Walnut streets, Lincoln.

Morris Hospital Laboratory, 150 W. High street, Morris.

Paris Hospital Laboratory, 302 E. Crawford, Paris.

St. Francis Hospital Laboratory, 616 N. Glen Oak avenue, Peoria.

St. Mary's Hospital Laboratory, 1015 O'Connor avenue, La Salle.

Tower Clinical Laboratory, 6 N. Michigan Avenue, Chicago.

U. M. W. of A. Medical & Relief Association, 508 W. St. Louis street, West Frankfort.

Yours very truly,
H. E. McDaniels, Ph.D.,
Co-ordinating Bacteriologist.

Original Articles

THE NATIONAL HEALTH ACT‡

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The so-called National Health Act, S.1620, introduced by Senator Robert F. Wagner of New York in February, 1939, and considered at extensive hearings before a subcommittee of the Senate Committee on Education and Labor during April, May, June and July, is approaching a stage requiring a decision by the Congress. It is assumed that the bill may be reported to the Senate during the coming session and that it may be pressed to a vote in both Houses while the primary election campaigns of 1940 are in progress.

Seldom has more formidable propaganda in behalf of legislation been organized than in the case of this measure. The bill had its genesis in the work of committees organized under the President's Committee on Economic Security which formulated the general outlines of the program incorporated in the Social Security Act of 1935. Following the enactment of that law President Roosevelt in August, 1935, appointed the Interdepartmental Committee to Coordinate Health and Welfare Activities. This committee, with the assistance of a technical committee selected from government departments, prepared the comprehensive program which is the basis of the present Wagner bill. A general conference, selected for the most part from groups known to be favorable, considered the program in July 1938. President Roosevelt submitted the report of his committee together with his own endorsement to Congress in January, 1939.

The bill upon its introduction in the Senate was referred to the Committee on Education and Labor rather than to the Committee on Finance which was in charge of the Social Security Act and which in the 1939 regular session reported and obtained the enactment of comprehensive amendments to the original law. The present Wagner bill is in the form of amendments to several titles of the Social Security Act, with all of which the Finance Committee is intimately familiar. The assumption is that the proponents of the bill believed the prospect for complete approval of their far-reaching plan was better at the hands of the Committee on Education and Labor, whose members were selected chiefly because of their interest in subjects related to education and labor, rather than if it were entrusted to the Committee on Finance, whose members have as their primary responsibility the raising of revenues to meet the costs of the Government.

The subcommittee which conducted hearings was composed of Senators James E. Murray of Montana, chairman. Vic Donahey of Ohio, Allen J. Ellender of Louisiana, and Robert M. La-Follette of Wisconsin.

Emphasis upon objectives rather than methods has become a common practice in the promotion of panaceas for existing evils. The official title of the bill, "The National Health Act of 1939," appears to indicate a program to which no objection can be advanced. The title, however, typifies the objectives rather than methods of accomplishing them. Everyone wishes to promote the national health. Anyone found in opposition is accused of sinister motives. A member of Congress seeking reelection takes his political life in his hands when he ventures to vote against a bill which on its face advances the health of the nation and provides better care for the underprivileged portion of the population.

The Federal Government has taken long strides in its recent assumption of responsibility for social welfare. This trend has had a large measure of justification in the unusual conditions of the depression which swept over the world in 1929. Sufficient time has elapsed, however, to make it clear that the actions of the Federal Government have not always proved wise and that the schemes of well-meaning enthusiasts require more careful examination than has sometimes been given. The rejection in some of the recent State elections of fanciful old age and other social security plans was a hopeful sign. The people are turning their attention more to methods and do not propose long to be confused by those who stress worthy objectives but fail to put forward a proper mechanism for their attainment.

Objections to the pending National Health Act may be grouped around four points, as follows:

‡Address, Chicago Medical Society, Cook County Health Forum, December 6, 1939.

1. Enactment of the legislation would be a further step toward a centralization of authority in the Federal Government and a destruction of the sovereignty of the States.

2. Paternalistic features of the plan would weaken the moral fiber and tear down habits of self-reliance and the exercise of individual intiative which have been fundamental characteristics of the American people under our system of government.

3. The origin and manner of presentation of the program afford a striking example of the tendency of bureaucracy to expand its power.

4. Cost of the program, on top of tremendous obligations already assumed for social services, would be a serious drain on the Budgets of Federal and State Governments, and its financing would add a further obstacle to the functioning of our economic structure.

The dual system of government, under which the Federal Government and the States each possess sovereignty in their respective fields, has been one of the checks and balances which has kept the United States on an even keel through the years. It has helped to prevent a centralization of authority in the Federal Government, which inevitably would have led to abuses of power resulting in a breakdown of the governmental system. Except for the existence of the checks and balances provided by the dual form of government, the division of powers of the Federal Government among three coordinate branches, and the guaranties of individual liberties in the Bill of Rights, the United States might have been caught in the world movement toward dictatorships. Even with the existence of these checks we have witnessed an alarming tendency toward centralization of power.

From the begining of our government matters relating to the health of the people have been primarily the concern of the States and local governments. It has been contrary to our system to regiment our people from Washington, even if the regimentation is intended to improve their health. We tried through a constitutional amendment to have the Federal Government control the drinking habits of citizens, but an aroused electorate finally instructed Congress to propose repeal of the amendment.

In the past decade the storm and stress of depression have been responsible for a very great increase in Federal power at the expense of the State. To some extent this employment has been based on necessity. The financial plight of our local governments made it impossible for them to bear the entire burden of relief and other activities intended to relieve the distress of victims of the depression. At the same time, many of those who favored Federal appropriations for social purposes have recognized that the new system would lead to waste and extravagance and might be responsible for a new generation of people without the sturdy, self-reliant characteristics of previous generations. Because of the abuses and injurious effects of our present relief system a future Congress is likely to restore a greater measure of responsibility to the States and local governments.

The proponents of the National Health Act emphasize that it does not provide for Federal administration of the expanded health program. As described by the President in his special message to Congress last January, "the essence of the program recommended by the Committee is Federal-State cooperation." It is true, as he stated, that the bill, instead of proposing a great expansion of Federal health services, provides for a comprehensive program to be administered by States and localities with the assistance of Federal grants-in-aid.

Nevertheless, the program contemplates the expenditure of Federal funds to meet a very considerable part of the costs and requires Federal approval of the original plans of the States and of their administration. The Federal Government proposes to coerce the States into embarking upon elaborate health programs, whether or not an acute need may exist or whether the local share of the funds might be better expended for other purposes. Thereafter, the Federal Government proposes to remain in complete control, a State exercising its discretion only at the peril of being cut off from Federal funds.

The Federal Government will be in a position to coerce the States to adopt health programs. If a State does not choose to accept Federal money it is passing by an opportunity to share funds contributed by taxpayers of the entire nation. Furthermore, regardless of whether the State takes Federal money, taxes paid by its own citizens to the Federal Government will be used for health programs of other States. Under the circumstances, few if any States will refuse

the grants-in-aid. Acceptance means that the States themselves must expend very considerable amounts for the same purposes, these amounts being expended not at the discretion of State or local officials but as required by the Federal bureaucracy in Washington. The expenditures of State or local funds may mean that no money will be available for purposes which in the judgment of resident citizens are more urgent.

In effect, the sovereignty of the States will be destroyed. The administrative agencies in the States will become mere puppets of the Federal Government. All of this would not be strange in a totalitarian government of Europe, but it would represent a flagrant violation of our principles of government.

An examination of the provisions of the Wagner bill will help to make the situation clear.

The first part of the bill provides for grants to States for maternal and child welfare. Under this heading are (1) maternal and child health services, and (2) medical services for children and services for crippled and other physically handicapped children.

The second part provides for grants to the States for public-health work and investigations.

The third for grants to the States for hospitals and health centers.

The fourth for grants to the States for medical care.

The fifth for grants to the States for temporary disability compensation, or in other words, for compulsory health insurance.

Under the first subdivision of the first part of the bill grants are authorized "for the purpose of enabling each State, as far as practicable under the conditions in such State, especially in rural areas suffering from severe economic distress, to extend and improve services, supplies, and facilities for promoting the health of mothers and children, and medical care during maternity and infancy, including medical, surgical and other related services, and care in the home or in institutions, and facilities for diagnosis, hospitalization and after-care." The grants under the second subdivision are "To extend and improve services, supplies and facilities for the medical care of children, and services to crippled and other physically handicapped, children in need of special care, such services and facilities to include medical, surgical, corrective, and other related services and care in the child's home or in institutions, and facilities for diagnosis, hospitalization, or other institutional care."

In the second part of the bill grants are authorized to enable the States "to extend and improve public-health work, including services, supplies, and facilities for the control of tuberculosis and malaria, for the prevention of mortality from pneumonia and cancer, for mental health, and industrial hygiene activities, and to develop more effective measures for carrying out the purposes of this part of this title, including the training of personnel." As a second subdivision under this part appropriations are made to the Public Health Service through the National Institute of Health for investigations relating to health, disease, sanitation and matters pertaining thereto.

The third part of the bill authorizes grants to enable the States "to construct and improve needed hospitals, to assist the States for a period of three years in defraying the operating cost of added facilities, and to develop more effective measures for carrying out the purposes of this title."

The fourth part of the bill authorizes grants to enable the States "to extend and improve medical care (including all services and supplies necessary for the prevention, diagnosis, and treatment of illness and disability), and to develop more effective measures for carrying out the purposes of this title, including the training of personnel."

The fifth part of the bill authorizes grants to assist the States "in the development, maintenance, and administration of plans for temporary disability compensation."

The authorizations for appropriations under the first part of the bill are, for maternal and child health services, for the first three fiscal years, $8,000,000, $20,000,000 and $35,000,000, respectively, and, for medical services for children and services for crippled and other physically handicapped children, for the first two fiscal years, $13,000,000 and $25,000,000, respectively.

Authorizations of appropriations under the second part of the bill are, for grants to the States for public-health work, for the first three fiscal years, $15,000,000, $25,000,000 and $60,000,000, respectively, and, for investigations by the Public Health Service through the National

Institute of Health, for the first three fiscal years, $3,000,000, $3,500,000 and $4,000,000, respectively.

Authorizations of appropriations under the third part of the bill, for grants to States for hospitals and health centers, for the first three fiscal years are $8,000,000, $50,000,000 and $100,000,000, respectively, with additional unestimated amounts for each year for mental and tuberculosis hospitals, and also an annual amount, commencing at 1,000,000, for administrative expenses of the Public Health Service.

The authorization of appropriations under the fourth part of the bill, for grants to States for medical care, for the first fiscal year, is $35,000,000.

The authorization of an appropriation under the fifth part of the bill, for grants to States for temporary disability compensation, for the first fiscal year, is $10,000,000, with $250,000 additional to the Social Security Board for administrative expenses.

In each case the authorization provides for continuing appropriations for an indefinite period of such amounts as are "deemed necessary" or are "sufficient" for the specified purposes.

These sums, including amounts for the second or third years equal to the authorizations for the first or second years but not including the unestimated amounts for mental and tuberculosis hospitals, total $93,250,000 for the first fiscal year, $169,750,000 for the second fiscal year, and $270,250,000 for the third fiscal year.

According to the sponsors of the plan, total expenditures of the Federal Government and the States by the time the program has been in operation for ten years will amount to as much as $850,000,000 annually. The Federal part of this cost will be considerably more than the $270,000,000 indicated for the third fiscal year.

The five separate parts of the bill contain somewhat similar provisions with respect to conditions which must be met by the States before they can obtain the Federal grants-in-aid. In each case broad power is vested in a Federal Bureau or Board. The Chief of the Children's Bureau, subject to the approval of the Secretary of Labor, is the controlling official in the case of grants for maternal and child health services and for medical services for children and services for crippled and other physically handicapped children. The Surgeon General of the Public Health Service is the official who must approve the plans of the States in connection with public-health work. The same official controls grants to the states for hospitals and health centers. The Social Security Board is given jurisdiction over grants to States for medical care and for plans for temporary disability compensation.

Some idea of the maze of red tape which will be involved in the contacts between the States and the Federal Government may be gained from this scattering of authority among these three different Federal agencies. It is more than likely that in most States all of the health services will be under a single agency, which will be subject to the orders of three Federal agencies, the Children's Bureau, the Public Health Service and the Social Security Board.

The power of the Chief of the Children's Bureau in the case of grants to States for maternal and child health services is typical of the authority vested in the Federal Bureaucracy under each of the five parts of the bill. The amount of allotments to the various States will be determined in accordance with rules and regulations prescribed by the Chief of the Children's Bureau with the approval of the Secretary of Labor. Factors to be taken into consideration are (1) the total number of births in the latest calendar year for which statistics are available, (2) the number of mothers and children in need of the services, (3) the special problems of maternal and child health, and (4) the financial resources of the States.

Before a State can get its money it must submit a satisfactory plan. This plan must provide for financial participation by the State. It must provide for a State-wide program or for extension of the program each year so that it shall be in effect in all political subdivisions in need of the services within five years. It must provide for the administration of the plan by the State health agency or for the supervision by that agency of any part of the plan delegated to another State or local agency. It must provide such methods of administration as are found by the Chief of the Children's Bureau to be necessary for the efficient operation of the plan, including methods relating to the establishment and maintenance of personnel standards on a merit basis, and methods of establish-

ing and maintaining standards of medical and institutional care. It must provide for an advisory council or councils composed of members of the professions and agencies, public and private, that furnish services under the State plan, and other persons informed on the need for or provision of maternal and child services. It must provide that the State health agency shall make such reports, in such form and containing such information, as the Chief of the Children's Bureau may from time to time require, and comply with such provisions as that official may from time to time find necessary to assure the correctness and verification of such reports. It must provide for cooperation and, when necessary, for working agreements between the State health agency and other public agencies. It must provide that the State health agency shall have authority to make such rules and regulations as are necessary for efficient operation of the service.

Besides the advisory council or councils to be set up in the States the Chief of the Children's Bureau is authorized to establish one or more such bodies. It is noteworthy that in the case of none of these councils is there a requirement of representation of the professional organizations such as the American Medical Association. Members of the interested professions are to be on the councils, but they may be handpicked by the Federal bureaucracy rather than by the profession itself.

The requirements with respect to grants for other purposes are very similar to those outlined relating to maternal and child welfare. In the case of grants for the development and maintenance of plans for temporary disability compensation certain general specifications are provided for such plans. It is stipulated that the legislatures of the States in enacting laws for what the bill refers to as temporary disability compensation, but which is more commonly known as health insurance, must surrender their sovereignty. The State laws must contain provisions giving the Federal Social Security the final voice in the determination of administrative plans. The State agencies administering health insurance must make reports to the Social Security Board in conformity with its regulations.

Considerable discretion is vested in the Federal bureaucracy in the determination of allotments to the various States under the different grants. In the case of health insurance the Federal Government would bear one-third of the total cost under approved State systems. With respect to the four other types of grants the States will fare inversely to their financial resources. The Secretary of the Treasury, the Secretary of Labor and the Chairman of the Social Security Board are authorized to determine the financial resources of the States annually on the basis of their per capita income. The percentage of the total cost of State programs for maternal and child welfare, public health and hospitals and health centers will vary from 33⅓ to 66⅔ per cent, the richest States to get the smaller allotments and the poorer States larger amounts. In the case of State programs for medical care, the percentages will range from 16⅔ to 50. Intermediate percentages between the low and high amounts will be worked out by the Federal officials in an exact rating of the financial standing of the various States.

It requires no further elaboration of the details of the legislation to prove that the Federal Government will be in complete control of activities which under our system of Government are the primary responsibility of the States, counties and municipalities. The system of dual sovereignties is completely destroyed with respect to these activities.

The entire program smacks of paternalism. It is proposed that the Government do for citizens what they have been accustomed to do for themselves. Such a program is not out of place in socialistic or fascist governments, but is in sharp contrast to the habits of individual initiative and self-reliance which have formed the basis of our system of free enterprise.

Our experience with relief programs in recent years has given everyone first hand evidence of the demoralizing effects of a paternalistic system. Provision for relief has been necessary, but it has been demonstrated conclusively that the dispensing of relief on too liberal a basis and without local responsibility for its cost is weakening the moral fiber of our citizens.

The testimony before the Senate subcommittee made it evident that the health program has been drafted on a basis far more liberal than can be justified by actual needs.

Health insurance figures prominently in the

program, although details as to the proposed State laws seem to be kept purposely in the background. While the Wagner bill says nothing about compulsory health insurance, there is no question but that it is in contemplation. It means that Federal bureaucracy will exert pressure upon the States to enact laws making this form of insurance compulsory to the same extent as unemployment insurance and old-age pensions. The model bill of the American Association for Social Security which has been introduced in many State legislatures provides for contributions from employers, insured employees and the State government, the three classes of contributions totaling 6 per cent of the wages of insured persons.

It is not strange that the American Medical Association has objected to health insurance with its regimentation of the medical profession to provide treatment in wholesale quantities to persons insured. The doctors are well aware that the treatment thus given in European countries which have health insurance is vastly inferior to that under our system of private practice, that the availability of health insurance in those countries has encouraged idleness of workers with minor ailments, that the medical statistics of such countries show that instead of improving the health of the people as a whole, the opposite has been true, and that far greater progress has been made in the United States without any system of subsidized medicine.

It has long been recognized that one of the greatest evils of a government bureaucracy is its tendency to perpetuate and expand its power. No more glaring instance of such a tendency has ever come to light than the movement for the adoption of the National Health Act. The program was drafted within the Federal bureaucracy with a singular disregard for the opinions of organizations of the professions most familiar with existing needs.

The original sponsors of the program were government officials and employees. The committee which presented the plan to the President was named by him and designated as the Interdepartmental Committee to Coordinate Health and Welfare Activities. Chiefly responsible for the details of the plan was a group known as the Technical Committee for Medical Care. The only members of this committee were employees of the Children's Bureau, the Social Security Board and the Public Health Service. The testimony before the Senate subcommittee shows that the American Medical Association, the American Dental Association and various organizations of other similar groups with a recognized standing were not consulted in the original framing of the program. The suggestions made subsequently by these groups when so-called conferences took place were completely ignored.

There is a mass of evidence before the subcommittee to show that many of the assertions with respect to the need for the legislation are erroneous. Sponsors of the program are accused of exaggerating the situation with respect to a present lack of adequate medical care. Spokesmen for religious as well as other groups which maintain hospitals testified that their capacity is greatly in excess of actual demands and that construction of public hospitals on the scale contemplated is unnecessary and would be injurious to existing institutions.

The public has become so accustomed to loose methods in the expenditure of public funds that proposals requiring annual expenditures running into the hundreds of millions no longer attract much attention. There is danger that sufficient consideration will not be given to the cost of the health program under the Wagner bill.

If nothing had been done to provide social security the situation would be different. A recent daily statement of the Treasury shows that during the fiscal years 1936, 1937, 1938, 1939 and 1940, up to the end of October, there had been collected by the Federal Government in taxes under the Social Security and Railroad Retirement Acts a grand total of almost two billions of dollars. In the same period grants to the States under the Social Security Board, the Public Health Service and the Children's Bureau, the three agencies named in the pending bill, amounted to nearly $925,000,000. Expenditures for the administration of the Social Security Act, the Railroad Retirement Act and the Railroad Unemployment Insurance Act in the same period amounted to about $75,000,000. Besides amounts raised from Federal taxes, the Treasury has had the custody of funds raised under State unemployment insurance laws amounting to an aggregate of about $2,135,000,-

000, about $1,400,000,000 of which remains on deposit in the form of investments in government securities.

Under the present Social Security Act it is expected that annual collections from Federal taxes for old age pensions alone eventually will approach two billions of dollars, or half the amount of all expenditures of the Federal Government.

The permanent obligations of this character which have been entered into by the Government aggregate an amount so huge that there is no present prospect of raising sufficient funds by taxation to avoid an annual deficit.

Not only do the ever-increasing expenditures for social and other purposes constitute a serious menace to the Budget, but any increase in taxation will aggravate further an excessive burden on the functioning of our economic institutions.

Congress in its recent amendments to the Social Security Act recognized that the payroll taxes were a factor in retarding business recovery. The effective dates of increased tax rates, the total of which will eventually be 9 per cent of the amount of payrolls, were deferred. It is obvious that additional payroll taxes in the States to finance health insurance, together with such financing methods as are used to raise the Federal Government's share of the cost, would be a further depressing influence on business tending to offset any benefits to the population as a whole.

In the face of the realities of the situation the proposal recently made by the trustees of the American Medical Association for the creation of a Federal health agency headed by a Secretary in the President's Cabinet or a Commission including competent physicians deserves consideration. The program suggested for coordination of health functions of the Federal Government, the appropriation of funds by Congress for allotment to such States as show actual needs in connection with the prevention of disease, promotion of health and the care of the sick, continuance of primary local responsibility for the public health, utilization of existing medical and hospital facilities to the utmost, continued development of the private practice of medicine and such expansion of public health and medical services as is consistent with the American system of democracy seems eminently sound.

Unless the American form of government is to be gradually broken down, the United States should not tolerate a socialization of medicine or the complete assumption by the Federal Government of responsibility for the public health at the expense of the sovereignty of the States. Congress should resist the movement sponsored by the Federal bureaucracy for the broadening of its powers under the terms of the so-called but misnamed National Health Act.

Omaha, Nebraska.

OPERATIVE FIXATION OF FRACTURE OF THE NECK OF THE FEMUR

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We have gone through two eras in the treatment of fracture of the neck of the femur and are now in the third. Hopelessness marked the attitude of the physicians as well as the patient towards this fracture before the pioneering work of Royal Whitman. Under the indifferent treatment of the first era a successful outcome was a surprise rather than an anticipation. Whitman ushered in the second era with his abduction cast and intelligent care of the old and infirm patient. The medical profession universally recognized the rationale of his methods and brightened its attitude towards this problem fracture. However, the percentage of nonunion left much to be desired.

Aggressiveness has marked the present era since Smith-Petersen published his first report in 1931 on internal fixation of fractures of the neck of the femur with the three-flanged nail which bears his name. Sporadic attempts at operative fixation had been made earlier, but to him goes the credit of forcefully presenting and popularizing a method for its successful accomplishment.

With a view towards simplifying the technique of operative fixation skewers, nails, screws, wires and pins are being used today. Not a month goes by without reports of new methods of fixation and new gadgets for the simplification of technique. Perhaps there is the excessive enthusiasm which is apt to accompany the introduction of any new method of treatment. However, whereas a generation ago these fractures

Read before Section on Surgery, Illinois State Medical Society, Rockford, May 2, 1939.

were approached with fear and trembling to-day they are attacked with gusto and seemingly with success.

This is a report of ten consecutive fractures of the neck of the femur treated by fixation with Austin Moore pins. Only those patients operated upon during 1937 are included in this report in order that near end-results may be presented. Up to 1937 the Whitman abduction cast was used routinely for these fractures with the following results: 20 per cent. mortality, 40 per cent. union, and 40 per cent. non-union. Austin Moore pins were chosen because they seemed simple and effective. The method of fixation is, I believe, immaterial so long as it is absolute and remains so until healing is complete. Operative fixation of a fracture of the neck of the femur is never easy. I am sure that the seasoned surgeon who is a beginner in this newly developed procedure (this of necessity includes most of us) will stumble into fewer pitfalls from which he cannot escape by using pins rather than the Smith-Petersen nail. This nail is ingenious, effective and deserving of no criticism, but it is not easy to put in.

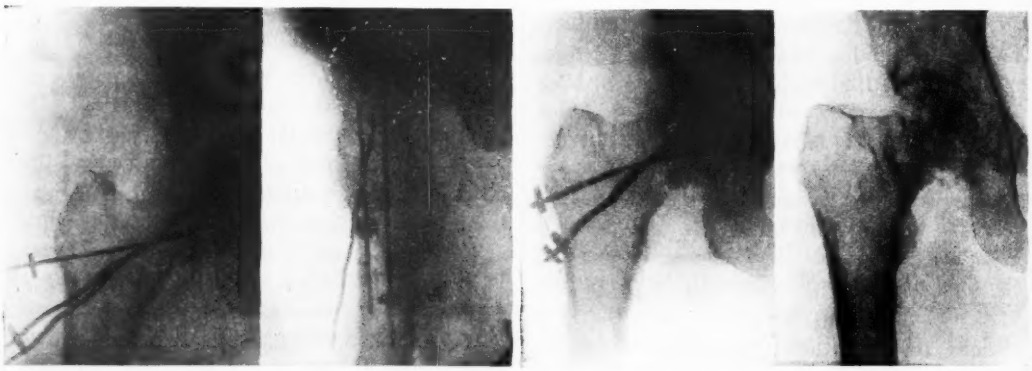

Fig. 1, a and b: X-rays made on operating table; c) appearance one month later; d) final result one year later.

GENERAL PROCEDURE

The injured patient is immediately hospitalized and given supportive treatment. The leg is put up in simple suspension-traction for three to five days to overcome muscle tension, relieve pain and allow for recovery from shock. For two nights before operation the skin about the hip is scrubbed with soap and water, alcohol and ether and covered with sterile towels. The morning of the operation ¼ gr. morphine sulphate and 1/150 gr. atrophine sulphate are given hypodermically one hour before the operation. The Thomas splint and the weights are removed just before operation, but the mole skin is left on the leg for later traction.

OPERATIVE TECHNIQUE

At present two methods are being used.

First: For fractures in the mid portion of the neck or near the head of the femur.

The patient is placed on a regular operating table. Beneath the fractured hip a 1.5 inch deep box-like receiver open at each end is placed and into it an x-ray plate is inserted. Adhesive strips are attached to the edge of the plate to facilitate its removal later. A wide muslin gauze strip is put over pads in the perineum and tied to the head end of the table to provide stability when traction is necessary. A nurse or an orderly sits at the foot of the table to hold and manipulate the leg as directed. The operative field is painted with iodine which is washed off with alcohol. The patient is lightly anesthetized with nitrous oxide anesthesia.

The S-shaped skin incision begins just below the anterior superior spine of the ilium, extends downward about three inches, then laterally over the greater trochanter and downward over the shaft approximately three inches. The skin edges are carefully walled off with towels. The sartorius and rectus femoris muscles are retracted medially and the tensor fascia lata muscle is retracted laterally.

The capsule of the joint is opened by an incision parallel with the neck of the femur. Any

fibrous tissue strands are removed from between the fragments. The fractured surfaces are accurately aligned. The tensor fascia lata and vastus lateralis muscles are then split longitudinally exposing the lateral surface of the femur just below the greater trochanter. Three Austin Moore nails are tapped in with a hammer. (Fig. 1). On one pin a curved hemostat is clamped and on another a straight hemostat is clamped to facilitate identification of the pins on the x-ray plate. The wound is covered with a sterile sheet and antero-posterior and lateral roentgenographs are made (fig. 1). If the films show the pins in satisfactory position in both views, nuts are threaded on the pins to the shaft of the femur and the ends of the pins are cut off. The fragments are impacted. The capsule is loosely closed, the split muscles coapted, dead spaces obliterated and the skin closed with silk.

The patient is returned to bed where traction is reapplied until it is apparent that primary wound healing is taking place. As soon as the wound has healed a walking caliper is applied and the patient allowed to go home with the aid of crutches. Follow-up roentgenographs are made as necessary. When bony healing is complete, the nails are removed.

Second: The following technique is used for fractures at the base of the neck close to the trochanters. The preliminary care is the same. For the operation the patient is taken to the x-ray department and placed on a fluoroscopic table. Perineal pads and straps are used to hold the patient in the desired position. Under gas anesthesia the fracture is reduced by the Leadbetter method and the position checked by fluoroscopic examination. An assistant maintains the position by traction and internal rotation. A small incision is made below the greater trochanter and three Austin Moore pins are inserted under fluoroscopic control. Antero-posterior and lateral films are made as a final check on the position of the pins and of the fragments. Nuts are threaded on the pins, the ends cut off and the wound closed. Postoperative care is as outlined above.

RESULTS

The ages of these patients were as follows: 51, 78, 71, 55, 64, 62, 56, 49, 65, 88.

There were no postoperative deaths.

The only complication of note was one subcutaneous wound infection which cleared up promptly without any untoward result.

Six of the fractures were operated upon shortly after injury. Of these five are solidly united and one is a complete non-union.

Four patients were operated upon 6, 7, 8 and 12 weeks respectively following fracture. The first three have obtained solid union although in one patient bony solidification of the fragments did not appear until six months after the operative fixation. The fourth, a woman 72 years old, had a severe pneumonia and a stubborn pyelitis and cystitis during the three months she had been kept in traction following the intracapsular fracture of the neck of her left femur. The x-ray picture then showed that the head of the femur was dead. As her condition was too poor to warrant an attempt at a reconstructive type of operation three pins were inserted. Union of the fragments was not anticipated. Following the operation she was gotten out of bed and urged to get about with a walking caliper and crutches. She regained 30 pounds and is entirely free from pain. At the present time, 20 months following operative fixation, the pins are still in, the fragments are in good position, and there is some evidence of revitalization of the head. Whether union will eventually occur, or whether the head will slowly crumble time only will tell. At any rate, she has a painless hip and can get about independently.

OBSERVATIONS

1. Unless it is borne in mind that the head and neck of the femur point slightly anterior the pins may miss the head during insertion and project out of the posterior surface of the neck. Only by means of lateral as well as antero-posterior roentgen films can the position of the fragments be accurately checked.

2. After completing the insertion of the pins and attaching the nuts the projecting portion of the pins should be cut short. Long ends protruding into the muscles cause irritation, discomfort and collections of blood and serum in the soft tissues.

3. A long S-shaped skin incision, as described, is better than two incisions—one over the joint and the other over the trochanter—which were used originally. The single incision lessens the dangers of skin contamination by al-

lowing satisfactory walling off of the skin edges with towels.

4. It has frequently been emphasized and is again reiterated that the fragments should be nailed in a valgus position. The direct weight bearing line in this position keeps the fragments snugly against each other. In the varus position the shearing force tends to angulate and separate the fragments.

5. Intertrochanteric fractures may be pinned successfully. In many of these cases there is some fragmentation. Often the upper end of the lower fragment consists of only the thin outer shell of the greater trochanter. To avoid angulation which will occur if the pins are put into the neck through this thin cancellous portion of the greater trochanter it is necessary to start the pins low in the unyielding bone of the shaft of the femur and direct them upward into the neck at an acute angle.

6. The pins should not be removed before solid bony union has been demonstrated by x-ray.

CONCLUSIONS

Enough evidence has accumulated to conclude that operative fixation of intracapsular fracture of the neck of the femur in adults has the following definite advantages over fixation in the Whitman abduction cast:

1. *Absolute immobility*

This is essential for union in a slowly healing fracture and can be obtained only by operative fixation of the fragments. No matter how snugly a Whitman cast is applied it does not remain snug, especially on fat people. The slightest amount of motion of the fragments on each other promotes delayed or non-union. The percentage of union following operative fixation is about 30 per cent. higher than with treatment in the Whitman abduction cast.

2. *Economy*

A two-weeks' stay in the hospital compared with a three-months' stay means a great saving not only to the private patient, but also to the state for the care of indigent patients.

3. *Comfort and improved morale*

In November of 1936 I put on my last Whitman cast. The patient, a 73-year old woman, whined and cried the entire three months about her incarceration in the cast. Her nerves became shattered and all kinds of sedatives produced only frightening nightmares. After all of that suffering she had a non-union. The satisfaction of being up and about, independent, able to feed one's self and go to the bathroom is in itself so great as to justify operative fixation.

4. *Mortality*

Reports indicate the opposite of what was anticipated: The mortality is lower with operative fixation than with other forms of treatment. This is due to the extra freedom and activity allowed. Of course, the wave of enthusiasm for operation has not yet gained its height. Unless it is constantly borne in mind that the simplest operative procedures on these fragile old people are fraught with danger, the mortality figures will bring discredit on what seems to be a tremendous advance in the treatment of intracapsular fracture of the neck of the femur.

715 Lake Street.

DISCUSSION

Dr. James K. Stack, Chicago: I am sorry I did not have an opportunity to hear all Dr. Potts' paper, but I did hear the conclusions and I think perhaps they included the gist of his remarks.

The thing that impresses me and pleases me is that he prefers to open these hips to ascertain whether or not he has a good reduction. Dr. Magnuson has long felt that the x-ray, even when lateral as well as anteroposterior views are taken, is not adequate evidence. Many times on opening a hip after apparent satisfactory reduction has been obtained, spicules of bone have been found which prevented satisfactory union.

We have had the opportunity to use the Austin Moore method and the Smith-Petersen pin, and I am sure that Dr. Potts does not mean to make an issue of the method of internal fixation. It does not make any difference what is used, just so you get a good reduction and firm fixation. The incision he proposed today, like the one proposed by Cubbins, Callahan and Scudari, is adequate not only for viewing the position of the fragments but for inserting the pin, whether a flange pin or Smith-Petersen nail. It does not mean much more surgery to make such an incision than to make a long lateral incision on the thigh. I think he is to be congratulated.

There is one other point I would like to bring up, that is, in this present stage of popularity of internal fixation, we must not feel that all intracapsular fractures of the neck of the femur must be pinned, because that is not the case. Not all patients are intolerant of a Whitman cast nor of the walking cast

which Dr. Apfelbach is using at the County Hospital and Dr. Christopher at Evanston. The patient who has an impacted fracture in valgus position has had nature to do for him everything that the surgeon can do, and it is simply a question of biding time and a minimum of effort. A fracture through the subcapital area, impacted in valgus position, will many times confuse the medical students, because they will not see the typical external rotation of the leg, because the leg is impacted into the neck of the femur. So we get a good reliable Leadbetter test without first performing the Leadbetter maneuver. In such instances bed rest, until the pain subsides, then bearing weight, first with crutches and then at the end of six weeks or two months no crutches at all, is the best treatment provided there is no evidence of aseptic necrosis of the head of the femur.

ENDOCRINES IN RELATION TO GROWTH IN CHILDHOOD

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Physical and mental growth depend in large part upon certain hormonal glands. There are, however, so many factors to be considered in the process of growth that one should show considerable conservatism in assigning the whole function to any single factor.

(1) The vital elements of hereditary transmission are contained in the chromosomes. The rate of lateral or linear growth and the completed architectural structure of the mature individual are inherent in the chromosomes. Perhaps also mental aptitudes are transmitted through these agents.

(2) Unfavorable environmental conditions may alter normal growth and development. Among these factors may be mentioned (a) reduction of oxygen and nutritional material contained in the maternal blood supply; (b) toxic products transferred from the mother to the fetus, or exposure to deleterious conditions after birth; (c) acute or chronic infections of the fetus or the newborn infant; (d) excess or deficiency of the hormones required for normal growth.

(3) Cerebral activity is thought to influence growth processes. Inflammatory foci, degenerative processes or neoplasms in the hypothalamus may cause obesity and transmit impulses through the autonomic nervous system to the pituitary gland, causing hormonal dysfunction and growth disturbances. There is clinical evidence that disease in the hypothalamus may influence the specific secretions of the pituitary gland. An example of hypothalamic dysfunction is the condition known as dystrophia adiposogenitalis, or Fröhlich's syndrome, in which obesity, sexual infantilism, increased sugar tolerance and mental hebetude may occur. Recent studies incline to the view that Fröhlich's syndrome is caused by a lesion in the hypothalamus, rather than by primary dysfunction or disease of the pituitary gland. Abnormal adiposity occurs in certain hypothalamic disorders which are not associated with any demonstrable involvement of the pituitary gland.

(4) Interrelationships between various endocrine systems certainly exist. For example, it is assumed that there is an intimate relationship between pituitary and thyroid. However, the finer details of endocrine interaction are not definitely known.

(5) Defective nutrition due to infections or disturbances of metabolism may affect growth adversely. It is recognized that congenital heart disease, dysfunction of the liver, interstitial nephritis, tuberculosis, syphilis and other acute and chronic infections may retard growth.

(6) A deficiency of vitamins may retard growth.

A hormone may be defined as a chemical substance produced in an organ which under normal conditions, being carried to another organ by the blood stream, excites in the latter organ some form of functional activity.

The effect of hormones on the growth and development of the fetus is an interesting point in our discussion. During the period when the fetus is growing most rapidly, the internal secretory glands are not yet functioning. In the later months of intrauterine life some of the endocrine glands begin to secrete the active principle in minimal amounts. Numerous observations support the view that the mother is supplying the hormones required for fetal growth. It is believed that infants in utero store up in their bodies growth hormones derived from the mother. For example, an infant destined to show clinical evidence of hypothyroidism does not usually present symptoms at birth. It is only later when the stored up active principle of

Read before Joint Session, at Illinois State Medical Society, May 4, 1939, Rockford.

the thyroid gland derived from the mother has been exhausted that manifestations of hypothyroidism appear.

Sex hormones are found in the newborn infant which are undoubtedly of maternal origin. It is supposed that they give rise to the so-called "pregnancy reactions." Ovarial and anterior pituitary hormones have been found in the urine of newborn babies until the fourth or fifth day after birth. Pregnancy reactions occur in both sexes. In the female infant these reactions are made manifest by the edematous, spongy and hyperemic vagina and vulva. In addition, the labia are swollen and there may be a discharge of bloody mucus. Pregnancy reactions in newborn male infants are said to be manifested by the discharge of small blood clots from the urethra. Hematuria has been observed, thought to be due to a hyperemic state of the prostate gland. Temporary hydrocele and enlarged testes are sometimes observed. The mammary glands enlarge in both sexes after birth. Von Jaschke believed that 95 per cent. of newborn infants secrete milk. It has been thought that the milk secretion ceases when the sex hormones are eliminated from the infant's body.

It has been assumed also that the hormones which produce the reactions of pregnancy above cited are derived from the estrin of the human placenta. Estrin, an ovary-stimulating principle, has an action similar to the gonadotropic principle of the anterior pituitary lobe.

Relation of Vitamins to Hormones. There is such a mass of evidence at hand to prove that vitamins are necessary factors for growth that one is led to inquire what is the specific effect of each on growth and what relationship, if any, exists between vitamins and hormones. The following assumptions may be stated:

Vitamin B deficiency may cause colloid goiter in rats. Sure and Buchanan found that pure crystalline vitamin B given to albino rats is antithyrogenic. Sure also found that vitamin A deficiency caused a 40 per cent. weight increase in the pancreas, and that in vitamin B_1 deficiency marked hypertrophy of the thyroid and adrenals, and hypertrophy of the pituitary, occurred. On the other hand, avitaminosis caused a marked atrophy of the thymus; this is particularly true of vitamin B_1 deficency.

Certain vitamins are prepared by synthetic processes in the body and are thus made available for nutritional purposes. Vitamin A is formed in the liver by the splitting of carotene. In the performance of this function does the liver become a hormonal gland? Under the influence of ultraviolet rays, vitamin D is formed in the skin.

Attention has been called to the fact that the same substance may act as a vitamin in one species and as a hormone in others. Vitamin C is ingested with food by man, monkeys, guinea pigs and rabbits (and is thus a vitamin), but is synthesized in the bodies of chicks, rats, mice, dogs and various other animals, resembling the production of hormones.

Animals deprived of vitamin A cease to grow. It is not known whether the vitamin bears any relation to the pituitary hormone which regulates growth.

Similarly, infants may be retarded in growth when the administration of vitamin B is deficient. A sufficient supply of B_2 especially favors growth. Vitamin C is also said to stimulate growth. Rickets due to vitamin D deficiency may lead to deformities of the spine or lower extremities, eventually causing diminution of stature.

Internal Secretion and Growth. The endocrine glands of infancy and childhood are of fundamental influence on growth processes. The glands which have to do with growth and development are the hypophysis, thyroid, the suprarenal gland, the pineal gland and the thymus. The parathyroid glands and the pancreas are more indirectly concerned in the growth process.

The Pituitary Gland (Hypophysis). It has been said that the chief function of the pituitary is not only to produce its own hormones but also to regulate the production of hormones in other endocrine glands. The hormones of the anterior lobe of the hypophysis influence skeletal growth. Acromegaly, gigantism and dwarfism are clinical conditions depending upon dysfunction of the pituitary gland. The removal of the anterior lobe of the pituitary in tadpoles caused retardation in growth and failure to undergo normal metamorphosis. Evans and Long proved that the anterior lobe produced growth-promoting hormones. They obtained a saline or alkaline extract of this active principle. This extract, injected intraperitoneally into young rats caused

striking increase in growth. Animals so treated attained twice the size of their litter mates. Giant rats can be produced by the injection of the saline extract of the anterior lobe. Injection of this hormone into hypophysectomized animals produced normal growth processes. Evans isolated a purified white powder from the saline extract, the injection of which caused regular increase of growth in female rats. Recent investigations have suggested that growth is not caused by a single hormone but by the combined action of several substances obtained from the anterior lobe. The results of the treatment seem better when the anterior lobe extracts are not fractionated too highly.

Acromegaly. Overactivity of the anterior lobe may produce acromegaly, a condition occurring mostly in adult life, characterized by overgrowth of the bones of the hands, feet and face. In true acromegaly an adenomatous tumor composed of acidophyl cells is found in the anterior lobe. The disease is rarely found in children, though if it does occur, the stature is enormously increased. However, after the epiphyses have united, further growth in height is no longer possible.

Gigantism. This condition is due to a pituitary lesion similar to that which occurs in acromegaly, but gigantism occurs in children when the epiphyses are ununited. Such patients become abnormally tall and the limbs are excessively long.

Dwarfism: If hypophysectomy is performed on a rat or dog, dwarfism is observed in the young animal, though in the adult animal a general cachexia occurs, producing a condition resembling so-called Simmonds disease. Deficient production of the anterior growth hormone in the human leads to arrest of growth. One group of miniature individuals is known as the Lorain type of dwarf, and is one of the best examples of hypopituitarism without obese tendencies. As a rule, the limbs are proportionate to the body, and they are symmetrical. The bony structure is light and sexual development is retarded. This type of dwarf is usually of normal intelligence and the appearance and facial expression are not unattractive. In some the head is relatively large in proportion to the body.

The dwarfism which results from hypothyroidism will be mentioned later. Aside from the endocrine factors in growth retardation, there are other causes of dwarfism not related to hormonal action. Among these may be mentioned achondoplasia or chondrodystrophy, and inflammatory or degenerative disease of bones, as well as the deformities of rickets, osteogenesis imperfecta, and Pott's disease. These latter conditions result in a reduction in stature, though maturation is not, as a rule, affected. Dwarfism may also occur in celiac disease, manifested by chronic intestinal indigestion, osteoporosis and delayed growth of bone. There is retardation of growth in so-called renal rickets, which is a condition manifested by softening of the bones and rachitic-like deformities associated with chronic renal insufficiency due to double hydronephrosis, congenital cystic kidneys or chronic interstitial nephritis.

Treatment of Growth Disturbances Due to Anterior Lobe Pituitary Dysfunction. Pituitary dwarfism should be treated early, before the epiphyses are sealed. It is not easy to determine at an early age whether a baby is simply retarded in growth because of nutritional disturbances, or whether the condition is due to a glandular deficiency. There are a number of anterior pituitary growth hormone preparations furnished by the bio-chemical manufacturers. The oral administration of these hormones is usually ineffective. They should be given hypodermically, preferably in doses of 1 to 2 cc. daily, or on alternate days. There is clinical evidence at hand indicating that the growth-stimulating preparations are potent in stimulating growth in experimental animals and in humans. In addition to the specific treatment an adequate diet should be supplied, including concentrated vitamins of A and D and vitamin B_1 and the vitamin B complex.

The Thyroid Gland. When the thyroid is completely removed in young rabbits, it is found that growth is retarded, the animals remain small, they may develop deformities of the front feet and curvatures of the spine, they become drowsy and disinclined to move. The heart rate is slow, the blood pressure is low, and the basal metabolism is decreased. The same results are obtained in other animals. In the human, thyroid insufficiency leads to diminished metabolism and retardation of physical and mental growth and development. Some of the conspicuous changes noted in childhood are the

peculiar swollen appearance of the skin, which is also dry and cold and sallow or yellow in color. The nails and teeth are brittle, perspiration does not occur readily, the hair is coarse and short and tends to fall out, the body temperature is usually below normal, the teeth erupt slowly and decay early, obstinate constipation is frequent, anemia is usually present, the voice is inclined to be hoarse and husky. Apathy and low intelligence are observed and growth is retarded. Few of these patients attain normal stature.

R. G. Hoskins remarks that a moderate degree of thyroid insufficiency is fairly common, but is frequently overlooked. He thinks that in these children mental alertness and intelligence are frequently below the normal level. In children in whom deficiency is present, x-ray pictures of the bones show that there is lack of growth at the epiphyseal junctions, and great delay in the development of the centers of ossification. The appearance of the nuclei of the carpal and tarsal bones may be delayed until the tenth year, and the epiphyses of the long bones may not unite until the twentieth or thirtieth year. This condition is treated by the administration of the dried thyroid gland substance. The required dosage can not be stated for each individual, though one should start with minimal daily doses, the size of which should be slowly and cautiously increased, until an effect is obtained. It is far from desirable to give a dosage sufficient to produce the full physiological effect. The size of the dose should be diminished, if restlessness and increased pulse rate occur. Continued overdosage may cause thyrotoxicosis. The cretin or the hypothyroid individual requires constant observation and treatment throughout life.

The Thymus. Gudernatsch fed tadpoles with thymus gland substance and found that these larvae grew faster than those controls fed on a usual meat and vegetable diet. Those that were fed thymus gland remained in the tadpole stage for a shorter time than those fed the usual diet. Later he fed rats on thymus substance and found that the successive generations showed an increase in the rate of growth, improvement in vitality and longer life spans. Leon Asher in 1915 obtained a water-soluble extract from the thymus gland which he called thymocresine. When this substance was injected into rats, acceleration of growth was observed.

Rowntree, Clark and Steinberg used an extract prepared from the calf thymus by Hansen (1930). They found that, if this substance was injected into rats, the third generation of these animals showed an increased rate of growth, which was further accelerated in succeeding generations. The experimental work on the thymus thus far has been performed on small animals, though as is frequently the case, results thus obtained cannot be literally translated into pharmacological reactions in the human being. In a few instances thymic tumors seem to have caused precocious growth and development.

The Pineal Gland. Rowntree and his associates experimented with an extract of pineal gland prepared by Hansen. It was shown that, if the substance was injected into rats, these animals became more dwarfed each succeeding generation. These experiments do not as yet clarify the function of pineal gland activities in man.

The Pancreas. It was formerly thought that a diabetic child on a well-controlled diet either grew normally or slightly in excess of the average rate. Julian D. Boyd and A. H. Kantrow believe that retardation of growth in children due to diabetes may be prevented or corrected, if glycosuria is suitably controlled by the administration of insulin and the diet properly regulated.

The Adrenal Glands. Hypersecretion of the adrenal cortex may produce stimulation of the sex glands, or possibly influence the anterior pituitary primarily, and the sex glands secondarily. Hypersecretion, particularly of the cortical substance, may produce abnormal hairiness, increase of subcutaneous fat, increased thickness of the upper layers of the skin and enlargement of the sex glands. Hypersecretion of the adrenal cortex tends to stimulate bodily growth and produce individuals of large stature, and with strong, well-developed muscles. These persons are usually very alert and mentally precocious. The male child may show increase in the size of the sex organs, whereas the female may show large breasts and excessive growth of hair, and menstruation may occur very early. Aside from the treatment of Addison's disease with extracts from the cortical substance of the gland, it has been suggested that these extracts may also be

administered to those suffering from hyporenal dysfunction, such as is noticed particularly in the severe prostration associated with diphtheria, pneumonia, surgical or traumatic shock, or peripheral vascular failure. However, the diagnosis of hypoadrenia may be difficult, and the administration of these remedies is more empirical and speculative than of proven value. The therapeutic use of epinephrine and its pharmacologic action as a vascular stimulant are well known.

The attempt has been made to review briefly some of the important facts in the relation of hormones to bodily growth and development. The therapeutic value of a few of these hormonal remedies has been proved to be effective in the treatment of some clinical conditions in man. Treatment with other hormonal extracts is still in an experimental stage. Progress in the study of substances derived from endocrine glands is proceeding rapidly, and we may confidently expect that new and important revelations concerning their isolation and therapeutic application will be discovered in the course of time.

THE TREATMENT OF POSTENCEPHALITIS, ESPECIALLY OCULOGYRIC CRISES

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HISTORICAL NOTE:

Encephalitides of various types have occurred and have been known to the medical profession for centuries. The case of a "maiden" who fell into continued fever with headache, dryness of the mouth and tendencies to sleep that S. E. Jelliffe[1] found in the literature dating back to 1695; ophthalmoplegic disturbances associated with the influenza epidemic of 1712; the cases seen by Jelliffe in 1890 and by Browning[2] in 1906 were most likely manifestations of the entity which to us has come to be known as encephalitis lethargica, epidemic encephalitis or Economo's disease after the late Baron Constantin Von Economo (1876-1931),[3] who in the pandemic of the winter of 1916-1917 which plagued central Europe, studied it and described it carefully. Since then, this malady has visited practically every known spot of the globe and, though masked, has retained enough of its identity to be recognized as encephalitis lethargica.

The causative agent has to this day remained one of the great enigmas of medicine. At best, we have only several conjectures as to its identity. The onset of the disease or, more correctly speaking, of the acute stage of this disease may be very stormy with a symptom-complex of fever, somnolence and ophthalmoplegias, or may pass unnoticed as a "common cold" only to be recognized later by a chain of tragically disabling sequelae. Authorities[4,5,6,7] agree that between 20 to 40 per cent of those afflicted with this disease succumb to it during the acute stage, while fully 60 to 70 per cent. become incapacitated in one form or another, for the rest of their lives, during the so-called postencephalitic or chronic stage of this disease. "If its acute stage chastizes us with whips," says A. J. Hall,[8] "truly its chronic stage chastizes us with scorpions."

We commonly think of the postencephalitic disturbances as belonging to either disorders of behavior, mobility or those of sleep.[8] So complex has the picture of the postencephalitic stage become, that it is probably rivaled in its bizarre manifestations only by lues.

One of the most troublesome and perplexing of the sequelae we encounter at present, is that variously known as "Blick Krämpfe," "Schauanfall," "Spasme oculaire de fonction," "crise oculo-gyre," "Tonic Eye Fits," "Oculor Spasm" and "Forced Upward Conjugate Deviation of the Eyes."

This condition "occurs most frequently, if not exclusively, in the Parkinsonion syndrome of epidemic encephalitis."[8,9,12]

It was L. B. Hohman[10] who, in 1925, first called our attention to this condition in this country. About three years previously, the German authors had already encountered this disturbance. Since then a voluminous literature grew up, dealing mainly with the description of the attacks, the frequency of occurrence and attempts at explanation of the pathology and mechanism of its production. It is interesting to note that by 1929 Jelliffe had already found reports of 200 cases.[1] A rarity at first, this condition is becoming more and more common. From three to five per cent. of the posten-

Read before Physicans' Association of the Department of Public Welfare of Illinois at annual meeting of Illinois State Medical Society, May 2, 1939, Rockford.

cephalitic Parkinsonians in the early twenties of this century having oculogyric crises,[1] the incidence steadily increased to 15 per cent.,[11] 17 per cent.,[12] 20 per cent.[8] and even higher.[13] At the Dixon State Hospital, I found 55 post-encephalitic patients, 41 males and 14 females, of whom 24 (17 males and 7 females) or 43.6 per cent. are oculogyrics.

MECHANISM OF OCULOGYRIC ATTACKS:

In reviewing the literature dealing with oculogyric crises one readily becomes convinced of the lack of actual knowledge of the mechanics involved in the production of these phenomena.

Theories explaining the occurrence of oculogyric manifestations place the lesions at important centers known to be associated with or located near the center for ocular movements.

The earliest and perhaps most known theory is that of Release of Cortical Inhibitions. McCowan and Cook in their interesting paper[12] on oculogyric crises argue, that the exhibitions of abnormal behavior encountered in the postencephalitic, support the thesis that a diminution in the cortical inhibitions is the mechanism of their production. Likewise, they contend, that the "lesion responsible for the crises does not lie in the lower centers for conjugate deviation but in the associational centers or paths leading to them." They would, therefore, have us believe that "psychogenic factors are of very minor importance in originating the phenomena under discussion, which must be regarded as due to definite lesions of the ocular nervous apparatus." Whittington[14] agrees with this conception and states that "In this disease the midbrain, particularly the substantia nigra and the corpus striatum, closely connected by the strionigral tract shows most signs of the disease and so, the connecting links for central control over the extrapyramidal system are affected." Marinesco and Draganesco[15] found these areas to be atrophic and the pigment cells replaced by glial tissue, in two of their oculogyrics who have come to post having died as a result of an intercurrent infection.

To explain the intermittent character of these attacks Cheney and Martins[16] offer the suggestion that they may be dependent upon altered metabolism, toxic products or cerebrovascular spasm.

Muskens[17] placed the lesion in front of the posterior commissure because of the frequent association of tonic lateral positions with the upward or downward positions of the eyes. The tracts involved in moving the eyes are said to be close together only at this point. If it is true that there exists a segmental arrangement of muscles in the pallidum and striatum, it would appear that any involvement of the supravestibular pathways said to have a tonic effect on the pallidum, would release control of that portion of the pallidum controlling the movements of head and eyes.[18] The attacks then could be precipitated by suggestion, excitement, fatigue, etc.

Some authors believe these ocular spasms to be epileptoid, and assume that an irritation of the meninges about the second frontal convolution, which is supposed to be close to a center of ocular movements, precipitates these spasms. The objections to this theory, as enumerated by Shapiro,[18] are: "The conjugate deviations due to cortical irritations as seen in man are practically always horizontal, while those which occur during oculogyric crises are generally vertical or oblique; that oculogyric crises can be brought on at times by various emotional factors or by suggestions, which is not the case with epileptoid seizures."

Hall[8] visualizes the oculogyric attacks as manifestations of the eye muscles being in a state of rest rather than spasm. "So long as the eyes are open, the extrinsic muscles are in a certain state of tone which keeps them always adjusted for binocular vision and prevents them from being moved in any direction beyond the point at which the pupils are just clear of the lids. . . (but) When the lids are closed, as in sleep, this tone in the muscle is relaxed, the eyes are no longer adjusted for binocular vision and they wander upwards behind the lids."

In his extensive papers on postencephalitis, Jelliffe[1] considers the oculogyric crises as compulsive manifestations on a "Somatic Substratum." His opinion is shared by other authors,[13] even though no anatomicopathologic basis for oculogyric crises has been found in the several recorded postmortem examinations.[15] The pathological changes in the central nervous system is in all essentials the same as in those postencephalitics who had no ocular manifestations.

TREATMENT OF OCULOGYRIC CRISES.

Dr. Neal[7] has justly stated that the U.S.P. has been exhausted in the search for a drug in the treatment of the acute state of epidemic encephalitis. For the treatment of the postencephalitic stage, not only the U.S.P. but many other sources have been exhausted. Everything from sedative, stimulant, serotherapy to psychotherapy,[7,11] has been tried. The success of all these therapeutic measures can best be evaluated by the fact that many investigations in search for an effective treatment are still in progress.

One of the first effective drugs to be used in the chronic stage, I believe, was stramonium. Juster[19] suggested it and it was first used in this country by Shapiro in 1926,[19] by Jacobson and Eppelen, at the Cook County Hospital in Chicago, in 1929,[19] and reported on favorably again by Cheney and Martins in 1930.[16]

The drug in its various forms produces effective somatic relief, the tremor lessens, and "eye seizures" decrease in number and severity. It lessens the mental lethargy and it may produce some effect on the cortical inhibitory mechanism, increasing its function.[16,19] The other effective drugs used were hyoscine[12] and atropine.[20] These drugs are members of the belladonna group, and as is well known are effective parasympathetic paralyzents.

Since many of the symptoms of epidemic encephalitis are due to an irritation of the parasympathetic system,[21] it was thought advisable to enhance the effect of these parasympathetic paralyzents by the addition of sympathomimetic drugs. And so, recently, reports of excellent results with such preparations have been forthcoming. In their comparison of two such drugs, ephedrine and benzedrine, (benzyl methyl carbinamine), Prinzmetal and Bloomberg[22] found the second to be about three times as effective as the first. While it is known that benzedrine stimulates the sympathetic system, the method by which this effect is produced and the part of the central nervous system affected is unknown.[23]

Finkelman and Shapiro;[21] Solomon, Mitchell and Prinzmetal;[24] Davis and Stewart,[25] have tried this preparation on their respective groups of postencephalitic patients with favorable results, the most striking of which was the effect on the group afflicted with oculogyric crises. Their number of patients with oculogyric symptoms was, however, small in comparison with twenty-four such cases at the Dixon State Hospital.

Because of their encouraging results, I set out to compare the effects of this drug* with those used at the Dixon State Hospital.

To start with, I believed that here we, at last, had found a remedy that will, if not cure, at least give these patients prolonged relief from these tormenting ocular spasms. To my disappointment, I soon learned that the oculogyric manifestation is but one of a complex syndrome and that it cannot be treated individually, but that the whole syndrome, the patient, must be treated, and that, the syndrome is of a nature that will not respond to sympathomimetic drugs alone.

These twenty-four patients have previously been treated with tincture of stramonium and hyoscine hydrobromide. They were slowly taken off these treatments, as suggested by Dr. Neal,[7] and observed without medication. For humane reasons, this period could not be extended over nine days. The majority of the patients became helpless, bedridden and suffered agony beyond description. Their tremors, myasthenia, sialorrhea, dysarthria, dysphagia, rigidity and their ocular spasms became unendurably severe without drugs.

With nine days as the unit time of observation, I have carefully observed the effects of benzedrine sulfate in doses of from 30 to 80 mg., atropine sulfate in doses of gr. 1/150 from b.i.d. to q.i.d., hyoscine hydrobromide grs. 1/100 from b.i.d. to q.i.d., tr. of stramonium in doses of from 3 to 7 drachms per day, and all these in combination with benzedrine sulfate. The number and duration of each "eye seizure" of each patient, the time of the day, the possible precipitating factor, the general behavior before, during and after the attack, was recorded. The findings are similar to those recorded in the literature;[26] namely, that most "seizures" occurred in the afternoon and evening hours, after a fatiguing task, such as continued reading, card playing, walking, wrestling, a lengthy moving picture, and especially emotional distresses, such as bad news from home, accusations of dishonesty, punishments and the like. Moroseness, crying, swearing and temper tantrums are the usual

*Benzedrine sulfate, as well as all other medications used in this observation, were very generously supplied to me by Mr. W. F. Thompson of the Smith, Kline & French Co., Philadelphia, Pennsylvania.

reactions of these patients prior to, during and after the "attacks." In some cases these symptoms assume the nature of an "aura" occurring in a similar pattern prior to each episode.

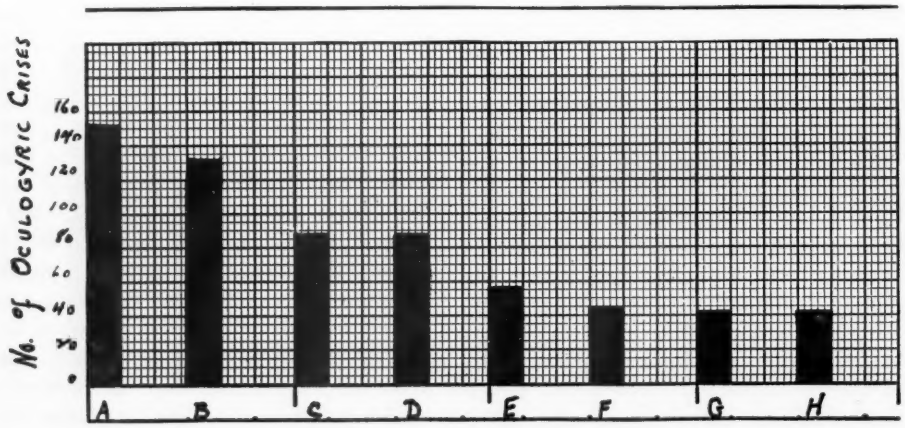
TABLE SHOWING THE FREQUENCY OF OCULOGYRIC CRISES FOR EACH CASE IN RESPONSE TO VARIOUS DRUGS

	A*	B	C	D	E	F	G	H
Case 1—S. M.	7	11	4	8	2	1	2	2
Case 2—O. N.	8	7	5	12	3	5	7	2
Case 3—F. C.	6	4	1	1	0	2	1	1
Case 4—J. K.	9	18	10	4	5	7	5	4
Case 5—J. Z.	14	22	11	11	2	2	3	2
Case 6—A. H.	1	2	2	0	1	0	0	0
Case 7—J. K.	1	4	2	2	1	0	0	2
Case 8—C. B.	7	4	0	2	1	2	1	2
Case 9—R. K.	11	2	8	2	1	5	1	2
Case 10—F. P.	4	3	1	2	1	0	3	2
Case 11—C. K.	1	3	2	2	2	2	2	3
Case 12—H. C.	5	3	7	3	4	3	1	2
Case 13—E. N.	7	4	1	4	1	2	1	2
Case 14—J. P.	0	1	0	2	2	1	2	2
Case 15—S. G.	3	2	0	5	0	2	0	0
Case 16—R. P.	13	5	1	2	2	2	1	1
Case 17—J. P.	4	5	3	6	3	2	3	2
Case 18—M. L.	11	3	12	4	4	2	1	3
Case 19—G. H.	6	4	3	2	3	1	1	3
Case 20—J. G.	2	2	4	3	3	1	2	1
Case 21—G. P.	12	7	0	1	2	0	1	0
Case 22—R. H.	7	7	3	6	6	3	3	3
Case 23—E. K.	14	6	4	3	1	0	2	1
Case 24—A. S.	9	0	4		6**			

*Refer to legend below diagram.
**Dropped from observation; see case history.

whole group for a period of nine days with each drug. The columns representing hyoscine hydrobromide plus benzedrine sulfate and tincture of stramonium plus benzedrine sulfate are the averages of three nine-day periods in each case. The columns representing tincture of stramonium and tincture of stramonium plus benzedrine sulfate are of the same height, representing 42 and 42 seizures, respectively, and would give the impression of similar results. In reality, however, the patients are very much happier when to tincture of stramonium benzedrine sulfate is added, for—as said before—the oculogyric crises are not their only tormenting symptoms. Benzedrine sulfate, a non-toxic drug,[23] seems to have a very marked effect on myasthenia, lethargy and general depression, and in combination with tincture of stramonium, which in this group of patients, at least, has a temporary effect on their rigidity, tremors, dysphagia, dysarthria, etc., is the most effective combination in the treatment of postencephalitis and especially oculogyric crises. It is of interest to note that as the number of seizures decreases from no medication to the best combination, the duration of each seizure increases. The relationship of frequency to duration of each seizure is not clear. Longer periods of observation may disclose it.

DIAGRAM SHOWING THE TOTAL NUMBER OF OCULOGYRIC CRISES FOR THE WHOLE GROUP IN RESPONSE TO VARIOUS DRUGS.



A—No medication.
B—Atropine sulfate.
C—Benzedrine sulfate.
D—Combination of atropine sulfate and benzedrine sulfate.
E—Hyoscine hydrobromide.
F—Combination of hyoscine hydrobromide and benzedrine sulfate.
G—Tincture of stramonium.
H—Combination of tincture of stramonium and benzedrine sulfate.

The table and diagram above represent the comparative effects of the previously enumerated drugs on oculogyric crises, and show the number of such attacks for each patient and for the

SUMMARY AND CONCLUSIONS

1. Encephalitis of epidemic proportions with its peculiar sequelae has been known before 1918, but to Economo goes the honor of having studied and identified it as an entity.

2. Oculogyric crisis, one of the sequelae of a complex syndrome of postencephalitis, has probably never been seen in any other disease.

3. The exact mechanism of its production is as yet a matter of speculation, as no definite anatomicopathologic basis has been discovered.

4. Oculogyric crisis, because it is a part of a complex syndrome, must be treated with the syndrome; efforts to treat it alone fail.

5. At present the most effective drugs in the treatment of postencephalitis, especially oculogyric crises, are the belladonna group of drugs of which tr. of stramonium is the most, and atropine sulfate the least efficacious.

6. Benzedrine sulfate is not a specific drug in the treatment of oculogyric crises, but gives definite relief of the associated symptoms of lethargy, narcolepsy and depression, when used in combination with tr. of stramonium.

7. Out of the twenty-four patients observed, nineteen showed a definite decrease in the frequency and severity of oculogyric crises, rigidity, myasthenia, sialorrhea, dysphagia, dysarthria, lethargy, narcolepsy and depression, in response to a combination of tr. of stramonium and benzedrine sulfate. Three patients showed similar response to a combination of hyoscine hydrobromide and benzedrine sulfate and two patients remained uneffected by any of the drugs used.

CASE HISTORIES

CASE 1.— S. M., 31 years old; American male of Italian parentage. Had influenza in 1918 and remembers "having seen double." When he recovered and returned to school he was fitted with glasses. From 1918 to 1932 he enjoyed good health. He finished grade school and found gainful employment in several industries; always working hard. In 1932, during his grandfather's fatal illness, he noticed a slowing "stickiness" in his movements, slight "shaking" and "fading" of his voice. In the same year following his mother's death, he was "scared to death" by his first experience of "upward turning of the eyes, and I had a feeling I was going blind." He states that for about twenty minutes "everything went blind." He could hear everything. He also answered questions, but he could not bring his eyes down, "hard as I tried." He continued to get these eye spells every night, particularly in the midst of an exciting "crap game." His condition became worse by 1934. His left half of the body "felt like paralyzed, dragging along, and everybody asked me about my voice, my left arm, my left leg, and why I continued to shake. Sleep would come over me every few hours and I could not keep awake." He never came to the attention of the police as a result of behavior disorders.

He was admitted to Dixon State Hospital on October 10, 1938, after having consulted several clinics. He was at the time helpless, unable to feed and dress himself. He presented a typical post-encephalitic Parkinsonian picture, with a very marked "washed out" facies and "blank gaze." Physical examination revealed nothing unusual. Serology tests were negative. I. Q. .79. He was put on the regimen described and soon began to show improvement. His mobility became free, the mask-like facies brightened, his voice cleared and is of a higher pitch. He not only helps himself, but helps with the work about the cottage. He is not sleepy during the day. He plays ball and says he feels better than ever before. He responds best to tr. of stramonium, drachm once t.i.d. and benzedrine sulfate 10 mgs. t.i.d.*

CASE 2.—O. N., 29 years old; Italian laborer. Has had only measles and whooping cough. At 13 years of age he was struck on the head, remained unconscious and was taken to the hospital where he remained for one week with "high fever." For a number of weeks afterward he "saw double." He sustained another head injury at 21 when he fell off a ladder. About one year following the second injury he began to feel "weak," tremble, "and things were not just right." Many doctors were consulted but none apparently recognized the condition. In August of 1935, he was admitted to Dixon State Hospital where, on examination, he was found to have a congenital shortening of the left arm with a partial ankylosis of the elbow, as a result of his second injury. He was slightly stooped, exhibited a coarse tremor of the extremities, open mouth, salivation, masked facies and slurring speech. His eyes "turned up" for the first time in 1932, while at work in a paper mill. He suffered much as these "eye spells" would come on every day in the afternoon. Following the attacks he would fall asleep. He experienced dizziness a few minutes prior to the attack. Many times he can off-set an attack by concentrating "his will against it." During the attack he can bring his eyes down and keep them down as long as he thinks of the attack, but should this attention wander away his eyes "jump back."

Physical examination at present reveals essentially the same findings, negative Wasserman and I.Q. of .79. He is composed and of good behavior.

The diagnosis in this institution was that of a post-encephalitic syndrome. Tr. of stramonium gave him relief of his tremors, somnolence and decreased the number of spells. The addition of 70 mgs. of benzedrine sulfate to one drachm of tr. stramonium q.i.d., gives this patient complete relief of drowsiness, increases his well-being and very markedly decreases the number of eye spells.

*In each case refer to the table for comparative effects of the drugs used.

CASE 3.—F. C., white male, 31 years of age. Mumps at seven and measles (?) at 19. In 1922 he was laid up with chills and high temperature for four days. He did not see double and was not incapacitated. In 1925 he suddenly developed a "weakness" in both upper and lower extremities with an "unsteadiness"; "shaking" set in soon after. The first "eye-spells" came about three months after, associated with difficulty in swallowing. At about the same time he began to exhibit delinquent tendencies and was sent to St. Charles School for Boys. After one year there, he was transferred to Lincoln School and Colony where he spent three years and transferred to Dixon State Hospital in April of 1928. Here he presented the picture of postencephalitis with a marked somnolence.

On examination, at present he is found to have a coarse tremor of the right upper and lower extremities, open mouth and drooling; his body is erect and stiff. The gait is cautious and shuffling. Reflexes are sluggish, serology negative, speech is slow, monotonous and thick.

He gets most relief from tr. of stramonium in moderately large doses and is helped subjectively, especially of lethargy, by the addition of benzedrine sulfate.

CASE 4.—J. K., 24-year old white male. Normal development up until 1924, at which time he was treated at Sarah Morris Hospital for "sleeping sickness." In the same year, he was cared for at the Cook County Hospital for an acute suppurative otitis media and erysipelas. Soon after his recovery he began to exhibit delinquent tendencies, as a result of which, he was committed to several state institutions.

To Dixon State Hospital he came in January of 1928. His stay here has been very stormy and typically compulsive. Here he presented rhythmic tremors bilaterally, open mouth, staring gaze, giving a statuesque impression, speech thick and monotonous. His eye seizures were recognized as those of oculogyric crises type.

In October of 1937, he developed "an ulceration of the right tonsil." A few weeks later Wassermann and Kahn tests were positive for the first time since his stay in this institution.

Tr. of stramonium gives him relief of his annoying tremors. Benzedrine sulfate seems to have no effect.

CASE 5.—J. Z., white male youth born on May 12, 1916. At eight years of age he "had what was diagnosed as brain fever and sleeping sickness for three months and recalls having seen double." He realizes that a change has come over him since having had that "brain disease." He became very restless, spits and chews his knuckles. His volitional control became very poor. Speech is slurring, rapid and indistinct with a nasal coloring. Excessive eroticism expressed itself in promiscuous "grabbing of girls by the breasts in the streets, park and anywhere a woman could be seen."

Because of these "sex" offenses, he was arrested several times and placed in several state institutions. After having recognized the postencephalitic condition of this patient, he was placed at the Dixon State Hospital in October of 1932. His stay here is notable for outbursts of anger and uncontrollable temper tantrums, crying and swearing, and homosexual practices.

He presents a mild tremor of the upper and lower extremities, a mask-like expression and an altered sleep pattern. Typical and frequent oculogyric crises set in five years ago. Wassermann and Kahn serology tests negative.

Since the introduction of benzedrine sulfate into his treatment with tr. of stramonium, he has shown favorable improvement not only in decrease of number of eye seizures, but in the reversal of the disturbed sleep pattern.

CASE 6.—A. H., 28 years old; white male. Usual childhood diseases. At eight years of age he began to exhibit character changes. He "became mischievous" and began to do poorly in school. When he reached his 19th year of life a "weakness and shaking" of the right half of the body was noted. His speech became "unclear." He was sent to Lincoln State School in December of 1921, where he remained until April of 1928. Records show that he was quite a behavior problem. From Lincoln he was transferred to Dixon State Hospital.

Examination at present reveals a very marked right hemiplegia, a propulsive shuffling gait, stooping and uninterrupted tremor of facial and lip muscles. Speech is low, scanning and monotonous. Repeated serology tests are negative. History of onset of eye seizures cannot be obtained. Responsive to tr. of stramonium and benzedrine treatment.

CASE 7.—J. K., 29 years old; white American male. No definite history of encephalitis. At the age of 12 he was shot "by a BB gun" in the face. One year later he began to exhibit difficulty in writing, walking and swallowing. Many doctors have been consulted for many years. The consensus of opinion was that he was developing a "creeping paralysis." His "eye spells commenced one year ago."

This patient was admitted at the Dixon State Hospital in May, 1929, at which time the examining physician described him as "presenting the characteristic picture of postencephalitic Parkinsonism." At present he has a shuffling uncoordinated gait. He is inclined to walk backward and assume all kinds of positions, drools badly, and has difficulty in swallowing. Rough tremors of both upper and lower extremities, as well as facial muscles occur only occasionally. He is edentulous and appears undernourished. The mouth is open and the eyes stare. His voice is unsteady and breaks from a low pitch to a high screaming falsetto. His eye seizures are infrequent and he "can control them if he concentrates." Narcolepsy not marked. Tincture of stramonium 1 drachm, t.i.d. and benzedrine sulfate mgs. 10 t.i.d., relieve him of his tremors, rigidity and eye seizures, but his drooling continues.

CASE 8.—C. B., 19 years old; American boy. No definite history of encephalitis. Usual childhood diseases. At two years of age he developed erysipelas, "a blood test" revealed 4 plus Wassermann, his mother a stage dancer, was also found to have a 4 plus Wassermann. Several courses of antiluetic treatments were

given to both mother and son. Several times the results were negative. At 14 years of age a complete change came over this boy. He cried, screamed, began to despise school, lie, masturbate, tortured animals and began to hallucinate and exhibit paranoid tendencies. He finally came to the attention of The Institute of Juvenile Research.

"Our most recent physical examination of C. B. found him in the Parkinson state of chronic lethargic encephalitis. He stood in a hunched posture, the head projecting forward and lowered. There was a tremor of the lids and fingers, especially of the left side. The left side of the face seemed slightly weaker than the right. Occasionally cogwheel resistance could be detected in the left elbow. There was an inconsistent Chaddock sign on the left and a definite positive Hoffman sign on the same side. The right pupil was found to be irregular and somewhat sluggish to light. The left pupil was fixed to light and accommodation. The face was rather immobile and the voice monotonous." He developed "eye seizures" four years ago just before his admission to Dixon State Hospital.

Present examination confirms above findings, except that the Parkinsonian state is more definite with loss of automatic motion of the arms, festination, slurring speech, drooling, mask facies and narcolepsy. He has hallucinations of the paranoid variety.[29] He responds best to tr. of stramonium one drachm t.i.d. and benzedrine sulfate mgs. 10 t.i.d. He is relieved of narcolepsy, tremor and oculogyric attacks, as long as medication continues.

Case 9.—R. K., white male born in 1911. Had scarlet fever at five years, and "sleeping sickness" at six years of age. Anamnesis is not complete. Was admitted to Dixon State Hospital on December 16, 1928.

The staff was of the opinion that he was exhibiting early symptoms of postencephalitis. Special note was made of his gait (festination), open mouth, mask-like face, and reversed sleep pattern. His history also makes note of the fact that he has developed sex perversions, mutilating tendencies (also described by Goodhart and Savitsky, and cited by Jenkins and Rowley,[27] killing domestic animals, and molesting little girls.

At present he is found to be an undernourished edentulous (self extracted), typical postencephalitic with a coarse cigarette rolling tremor bilaterally, festinating gait, forward as well as backward. Emotionally he is unbalanced, crying and screaming before and during the attacks of ocular spasms, which set in about five years ago, and have occurred regularly every two or three days, becoming progressively worse.

Tr. of stramonium decreases tremors but slightly, has little affect on sleep and behavior disturbances. Benzedrine sulfate added to the tr. of stramonium, gives this patient "pep," regulates the sleep pattern and decreases the severity of the oculogyric crises.

Case 10.—F. P., 25 years old; white male. No definite history of encephalitis. Came to the attention of the police at an early age for truancy, thieving and sex offenses. Was admitted to Dixon State Hospital in July of 1931.

At that time an "ironed out facies" was reported in his physical examination, with "no tremors." The physicians agreed that he was a victim of a postencephalitic syndrome with behavior disorders. The remarks of his later history deal with "falling asleep," at all times of the day and suffering of "forced upward movement of the eyes."

At present he presents the typical postencephalitic Parkinsonism. The body is stooped, shuffling scissor gait, with festination, very coarse tremor with cigarette-rolling element of both upper extremities. The tremor of the lower extremities is milder. Before and during an oculogyric crises, he exhibits uncontrollable temper tantrums, cries and swears.

Tr. of stramonium makes him deathly sick; vomits and complains of gastric and bladder discomforts. Hyoscine hydrobromide in doses of 1/100 of a grain 3 or 4 times daily, helps him subjectively. His tremors and eye spells continue, however. Benzedrine sulfate in small doses gives him more "pep and less sleepiness."

Case 11.—C. K., 28 years old; white male. No known history of encephalitis. Had most of childhood diseases. At 11 years of age "was hit by a brick thrown at him by a playmate." He was retarded at school. Since 1923 he has slowly assumed "a stooped position, began to shake all over and run instead of walking." External strabismus of right eye developed slowly. Wassermann and Kahn tests negative. He was admitted to Lincoln State School and Colony in June 1923, and transferred to Dixon State Hospital in February of 1926. During his 13-year stay in this institution he developed into a typical postencephalitic with marked rough tremors of the extremities, cogwheel rigidity, festination, indistinct slurring speech. No definite date is given of the beginning of his "eye seizures," but at present they occur particularly after "excitement." He is practically helpless, being bedridden, when off medication. The sleep pattern is reversed.

Tr. of stramonium, especially when fortified with large doses of benzedrine sulfate gives him relief, not only of his somnolence and of the reversed sleep pattern, but decreases his tremors and number and severity of eye spells.

Case 12.—H. C., 28 years old; white American male. Had encephalitis (?) in 1927, at which time he had high temperature. He remained in bed for one month sleeping almost continuously. A few days after recovery he experienced a weakness in the left half of the body. His left upper and lower extremity became progressively useless. He developed a dysarthria and peripheral tremor about one year after the acute disease. At about the same time he experienced his first "eye trouble."

Physical examination reveals a tall young man of phthisic constitution, waxen facies, left lower facial palsy, and a peculiar stare. A marked coarse tremor of upper and lower extremity is evident. He has a left hemiplegia with a left drop wrist and an ankylosis of the left foot; his gait therefore, is a mixture of propulsion and dragging. Eyes react sluggishly, other reflexes are lively. Laboratory tests are non contributory. Psychometric test I.Q. .59. He has typical oculogyric attacks at frequent intervals with no aura.

He can be made to break the trance of the attack as the author has done by manipulating a cataract knife, so that he could see it. "Don't hurt me Dr. Weiner," he pleaded, as he looked into my eyes. A few seconds later his eyes were again way up in the orbits. This scare procedure was tried again with success, but failed a third and fourth time, even though suggestions of "thrusting the knife into the eyes were made." He received no drugs, until his readmission to the Dixon State Hospital in August of 1938. He is relieved of his frequent eye seizures and tremors, but not so much of his narcolepsy, by the treatment of tr. of stramonium and benzedrine sulfate—4 drachms, and mgs. 30 per diem, respectively.

Case 13—C. N., 23-year-old white male. Has no definite history of encephalitis other than having "laid for weeks like dead" in an Akron, Ohio, hospital after leg amputation for acute osteomyelitis at five years of age. Since the age of seven he has experienced frequent seizures of sleep. Many times he "walked to school while asleep, and opened the eyes only upon reaching the school gate." At 13 years of age he developed tremors and restlessness. He was diagnosed "sleeping sickness" and sent to Lincoln State School. His "eye spells" started in 1932.

After his release from this institution he became a sex delinquent, molesting little girls, failing in his first year high school work. At home he was "uncontrollable" and at times "dangerous." He was admitted to Dixon State Hospital December 14, 1936.

On examination he is found to be a well developed and well nourished male, with a typical cigarette-rolling tremor of the hands. A coarse tremor is readily seen in the muscles of the face, lips and tongue. There is a suggestion of mask-like facies; speech is slurred. Left leg amputated to within 5 to 6 inches below the knee. Serology tests are negative. I. Q. .96. His ocular spasms occur irregularly, particularly after emotional stress. Both his eyes and head turn to the left and up. About two minutes before the attack, his eyes "begin to jump." He can bring them down "about three times," but then "they go up and stay put." Many times he screams and swears, cries bitterly and pities himself. Occasionally he has excruciating pains in the eyeballs. He does not think of anything during the attack, but hears, answers questions and cooperates with the examiner.

Responds best to large doses of tr. of stramonium 5—7 drachms per day fortified with 50 mgs. of benzedrine sulfate.

Case 14—J. P., 29-year-old well developed white male with an I. Q. of .58. Had encephalitis in 1928, was ill for three months and slept two days continuously. He recovered and felt well up until 1936, when he began to "tremble" and his movements began to "slow up." He felt "dopey and tired," and would fall asleep "most any place" during the day, but would stay awake at night. He lost all "pep" and could hardly "dress himself" but "could run well." About a a year ago he noticed that after a "funny feeling in the bones," both eyes[28] would go up and he "just could not bring them down." On examination it was noticed that he stooped and exhibited a rough tremor of both upper and lower extremities, lips and tongue. He had a mask facies, devoid of any expression even when provoked to laughter. His speech was slow, low and monotonous. Serology and other laboratory tests negative. His behavior during treatment was without remark. He responded best objectively as well as subjectively, to treatment of stramonium and benzedrine sulfate. When treatment of starmonium alone was given he continued to "nap" every several hours.

Case 15—S. G., a 32-year-old white American male of Polish lineage. Early childhood history checkered with automobile accidents, after one of which he was unconscious for two days. In 1918 he had the "flu" following which he had "peculiar feelings in the eyes." There was a fluttering of the eyelids and "all of a sudden the eyes turned up and became fastened." At about the same time he had noticed a weakness in his right hand; his eyelids "blinked often and he could not talk plain."

He made the rounds of the various clinics in Chicago in a search for a "permanent cure," but instead, received only temporary relief from hyoscine hydrobromide gr. 1/100 t.i.d. His eyes became more troublesome and interfered with his employment as a truck helper, upholsterer, etc., and he voluntarily entered Elgin Hospital in February, 1938. Having recognized his condition as being "chronic encephalitis," the authorities had him committed to Dixon State Hospital and was admitted here June 8, 1938.

Examination reveals a poorly nourished white male with a distinct right limping gait, typical Parkinsonian attitude, waxed appearance, irritating blepharospasm, rough tremor of the facial muscles and an indistinct slurring speech. Negative serology tests. On admission he was completely helpless. Narcolepsy very marked. Pupils did not react to light and accommodation, other neurological tests were non-contributory. Eye seizures are typical oculogyric attacks. He responded admirably well to treatment of tr. stramonium, one drachm t.i.d. and benzedrine sulfate 30 mgs. His eye seizures diminished both in length and severity. He is an active worker in charge of the cottage dining room and seldom falls asleep during the day.

Case 16.—R. P., white male, aged 24. At seven years of age he "fell from second floor down the stairs on the sidewalk and hit his head." Had diphtheria and measles at the age of ten years complicated by pneumonia. Since then has been very disagreeable, coming in conflict with the other children in the neighborhood. He began to "lie," masturbate and in general exhibited excessive eroticism. No definite history of encephalitis. Admitted to Dixon State Hospital from the Oaks School in July, 1929, and discharged in December, 1931. Readmitted in April, 1936. At his readmission this patient exhibited a text-book picture of Parkinsonism. All Parkinsonian features persisted to this day with the addition of oculo-cephalogyric crises. His general behavior is compulsive. He cries, laughs, swears, and attacks weaker patients about him, before his attacks of oculor spasm. During the attack he lies helplessly with head and eyes turned to the left and has a generalized rough tremor. Helpless without medication,

he responds admirably well to tr. of stramonium and benzedrine sulfate in moderately large doses.

CASE 17.—J. P., Italian male, born in 1913. Had "meningitis and encephalitis" at the age of two years. Anamnesis incomplete. Was admitted to Lincoln State School and Colony at the age of 12. While there his condition was recognized as that of postencephalitis.

He was transferred to Dixon State Hospital where the diagnosis was corrborated. His behavior here was erratic. Hypereroticism was noted at an early age. He could not adjust and caused considerable trouble. He has overindulged in homosexual activities and contracted G. C.

On examination at present he is found to be limping with a propulsive type of gait. He fatigues readily and presents a mask-like facies. His speech is indistinct and hard to comprehend. He has typical oculogyric crises frequently. He falls asleep every few hours. Serology tests negative and neurological findings are non-contributory.

He is helpless without medication, but responds well to tr. of stramonium and benzedrine sulfate.

CASE 18.—M. L., 24-year-old white American female. She had diphtheria, whooping cough, measles, chickenpox, bronchial pneumonia and infantile paralysis (?) at seven years of age. Admitted to Dixon State Hospital in October of 1929.

History as to onset of supposed infantile paralysis (?) cannot be obtanied. Physical examination reveals a well nourished and well developed female. Body inclined forward and bilateral equinovarus deformed feet. Scars are present over dorsal aspects of both ankles. The pupils are irregular and neurological findings noncontributory. Wassermann and Kahn tests are negative. Cries frequently without provocation. Speech very monotonous and indistinct, drools and has fine rhythmic tremors. Oculogyric attacks are bilerateral associated with cephalogyric element. Responds best to hyoscine hydrobromide.

CASE 19.—G. H., white American, 25 years old, female. Admitted to Dixon State Hospital on May 8, 1928. The history discloses that she had had "sleeping flu" in 1921. Until then she was developing normally. This disease left her with bilateral equinovarus deformities.

At present she is helpless in bed and must be fed. She has ankylosis of both knees, ankles and phalangeal joints of fingers. Her facial expression is blank, eyes wide open, mouth open and edentulous, drooling, mild tremor of both upper extremities, tongue and facial muscles. Reflexia is exaggerated. Speech is incoherent. Serology tests negative. Oculo-cephalogyric attacks are typical, prolonged, frequent and painful.

This patient responds well to hyoscine hydrobromide and benzedrine sulfate.

CASE 20.—J. G., 23 years old; Jugo-Slavian girl. Had encephalitis lethargica in 1926. Several years after, she was found to be overactive and uncontrollable at home. She slowly became stooped, acquireed a festination gait with rigidity in the muscles, a marked facies and much drooling. She was committed to a Montana State Hospital and transferred to Dixon State Hospital in February of 1931.

Her behavior was eratic, biting, scratching and molesting the other patients.

Physical examination at present reveals in addition to the above findings a bilateral equinovarus. Oculogyric crises set in four years ago, and occur infrequently. Her speech is indistinct and reflexes hyperactive, coordination faulty. Wassermann and Kahn tests are negative. Responds to a combination of tr. of stramonium and benzedrine sulfate.

CASE 21.—G. P., 21 years old; white female. Complete history unobtainable. Admitted to Dixon State Hospital in June of 1938. Diagnosis of postencephalitis made.

Examination reveals an obese, slowly moving girl, with mast-like facies and typical oculogyric attacks. She was troubled with attacks of sleep for some time and is said to have fallen asleep in school. Wassermann and Kahn tests negative. B. M. R.—13.

She was placed on observation with various drugs described. With tr. of stramonium and bezedrine sulfate her weight came down from 149 to 127. B. M. R. came up from —13 to plus 10. Her marcolepsy disappeared and oculogyric crises decreased in number and severity.

CASE 22.—R. H., 24-year-old unwed white mother. Admitted to Dixon State Hospital on April 16, 1937. At five years of age this girl had the "flu," mumps, whooping cough and smallpox, and at eight "sleeping sickness," after which she was always "drowsy." About two years after her "sleeping sickness," she slowly developed a "stooped posture," curvature to the "right" and "constant nervous twitching" and "difficulty in walking." Her parents state that she became irritable and disagreeable, used profane language, tired easily, and "eyes began to roll up into the head."

On examination at present, above findings are exaggerated, mouth is open, facies "ironed out," bilateral tremor is coarse, eyes stare, speech is indistinct and scanning. There is a right hemiplegia with reflexes exaggerated on that side. Diagnosis is postencephalitic Parkinsonism.

This patient does not respond to any of the medication tried.

CASE 23.—E. K., 28 years old; white girl. Committed to Dixon State Hospital by transfer from Lincoln State School and Colony. In her history there is a reference to "sleeping sickness" in 1918, during which time the patient was very sick and delirious. Two years after this sickness, weakness over the entire left half of the body set in. Tremors of the face, tongue and upper and lower left extremities came on later along with sialorrhea, impairment of speech and a slowly developing left divergent strabismus. About six years ago typical oculogyric attacks set in. A diagnosis of postencephalitic Parkinsonism was made.

At present she exhibits a lordotic attitude with rhythmic tremors as discussed above. She complains of "sleepiness" during the day. Wassermann and Kahn tests are negative. I. Q. 110.

She responds very well to tr. of stramonium which relieves her rigidity, tremors, and sialorrhea and to benzedrine sulfate, which 'peps" her up and keeps her "awake" during the day.

CASE 24.—A. S., 38 years old; white female. Admitted to Dixon State Hospital in February, 1937. She had a "goiter," since 13 years of age; sleeping sickness during 1923, during which time her mother "once tried to awaken her, but she only opened her eyes and went right back to sleep and slept almost continuously for two to three months." In 1931 she contracted lues from her husband, who has since died.

On examination she presents signs and symptoms of a triumvirate of thyroidtoxicosis, lues and postencephalitic Parkinsonism. She is a well formed malnourished woman, very nervous and anxious about her condition. There is a marked right external strabismus. There was a definite exophthalmos, and tachycardia, B. M. R. plus 43. Wassermann and Kahn 4 plus repeatedly after three courses of intensive antiluetic treatment. Spinal fluid Wassermann negative. There was a hemiparkinsonism involving the left side, with rhythmic pill-rolling tremors of the fingers and coarse continuous tremors of the left face, muscles and tongue. Neurological examination was non-contributory.

Her oculogyric crises started in 1933. She was put on the described regimen, but her B. M. R. jumped up to 90, so I dropped her from this group for special observation. It would be interesting to see the relationship between lues hyperthyroidism and encephalitis.

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For the permission and encouragement to make this observation, I am indebted to Mr. A. L. Bowen, Director of the Department of Public Welfare of the State of Illinois, Dr. Paul L. Schroeder, Criminologist, and to Dr. Warren G. Murray, Managing Officer of the Dixon State Hospital.

Dixon State Hospital.

DISCUSSION

Isidore Finkelman, M. D.—One of the most important events that occurred in relation to the continued training of the physician in the state hospitals was the formation of the State Hospital Physicians' Association and the section devoted to it by the annual meeting of the Illinois State Medical Society. Many State Hospital Physicians who heretofore have been content to consider their employment by the state as merely a means of earning a livelihood are now stimulated to work beyond their routine tasks and make original observations of value to the patients in these hospitals and present their findings at these meetings.

Dr. Weiner has done a good job with the material that was available to him. He has exhaustively described the various theories for the occurrence of oculogyric crises as a residual of encephalitis lethargica.

The psychologic components of this phenomenon deserve some mention. The patients that I have observed during the oculogyric crises have either hallucinatory experiences associated with ideas of reference, such as people talking about him behind his back, or compulsive and obsessive thoughts and a feeling of anxiety. With the disappearance of the neurologic components of the oculogyric crises there is also a relief of the mental symptoms.

The mental phenomena occurring during the oculogyric crisis are even more difficult to explain. There are mental components of emotions which also have somatic symptomatology, such as fear that is accompanied by colitis, dryness of the mouth, rapid pulse, etc.; or rage accompanied by increase in blood sugar and other bodily changes. The peculiar turning of the eyes backward in the oculogyric crisis may be the bodily counterpart of the mental phenomena that present themselves. There probably is a feeling of helplessness during the oculogyric crisis and the patient being unable to see who is behind him may elaborate ideas of reference, develop a feeling of anxiety and other mental phenomena. This may be established as a conditioned reflex occurring always with the oculogyric crisis. The therapeutic effect of benzedrine and the belladonna group of drugs may indicate that the oculogyric crisis is of vasospastic origin.

Dr. Benjamin Boshes, Chicago: I wish to point out that the reader stated that this condition is seen only in encephalitis of the epidemic type. However, we may find it in any type of encephalitis. From the standpoint of description, "oculogyric" means rolling of the eyeballs. In some form of petit mal we see the eyeballs moving upward, and in certain of the epilepsies, the pyknolepsies, and particularly in the petit mal attacks of the prepubertal period, we see these deviations of the eyeballs upward for a few seconds. Then they are brought down. The difference between the "oculogyric crisis" of the epileptic and that of the encephalitic is that the epileptic patient has a modification of consciousness while the encephalitic knows his eyeballs are up. We should keep in mind that these oculogyric crises are not confined to patients who have suffered from epidemic encephalitis.

Question: How is the stramonium and benzedrine sulfate given; at one time or one followed by the other, and in what dose?

Dr. Harry I. Weiner, Dixon (in closing): In this group of patients I gave the stramonium in doses of from 3 to 7 drachms per day depending, of course, upon how the individual patient reacted to this drug. The benzedrine sulfate I have given in very large doses, up to 80 mgs. per day. The literature reports even larger doses. If I am not mistaken, as much as 180 mgs. of benzedrine sulfate has produced no untoward effects. The only bad effects I have noticed have been gastric and bladder disturbances and insomnia. The first two, however, were only mild discomforts and responded well to either topical application of heat or the withdrawal of the benzedrine, or both. I like to give this sympathomimetic drug three times daily; at six and ten o'clock in the morning and at two in the afternoon; never later than two P. M., because it has in many cases caused insomnia when given later.

In conclusion, I would like to thank Dr. Finkelman for his discussion. I am very grateful to him for elaborating on the psychic manifestations of the oculogyrics. I, too, have noticed many psychic manifestations in my group of patients. These psychic manifestations are dominated by fears and hallucinations. The literature has many very interesting references to just these types of symptoms.

RARE FRACTURE — RARE CAUSE CASE REPORT

V. R. VANSTANE, M. D.

CHICAGO

On March 17, 1935, Mr. E. J. H. came to me with the complaint that he had injured his right arm at the elbow six days previously while bowling. He had not bowled any for many months or years until this occasion. He made several shots with no trouble, then while making another shot he drew his arm backward in preparation to propel the ball and just as he endeavored to pull the arm forward to force the ball forward he felt pain in the arm at the elbow joint. He continued bowling for a few more shots and experienced only a moderate pain at the elbow with each shot. Then with further efforts the pain became quite severe with each shot and he decided he should stop bowling and did so. For the next four days the arm gave no great trouble or pain, but the fifth day there was a great deal of pain in the elbow joint region, so much that he could no longer flex the forearm more than about ten degrees. This condition remained until he came to see me the next day. He had noticed some swelling about the elbow too.

On examination, there was noted slight swelling about the joint, especially about the dorsal aspect of the ulna and olecranon. Around this region, also, there was marked tenderness to pressure. There was very little pain to pressure around the radial head and the epicondyles of the humerus. Rotation of the forearm caused only slight pain when done passively or actively except at the extreme limits of rotation. There the pain became severe. The arm was held continuously in a slightly flexed position by the patient, that being the most comfortable. No other abnormality of position or carrying angle could be detected. No crepitus could be felt. An x-ray film which the patient had had made by his dentist before he came to me revealed an incomplete fracture extending from the joint surface of the olecranon about at its junction with the ulnar shaft in a zigzag line toward the dorsal cortex, but not extending through that. Figure 1 will illustrate diagrammatically the foregoing description of the fracture. The joint surface was somewhat irregular along the line of fracture, small fragments of edges being elevated.

The diagnosis of incomplete fracture of the olecranon extending dorsad from the joint surface was evident. Of course there was practically no displacement of the fragments.

Under gas anesthesia the arm was passively and carefully moved into complete flexion and extension, a little pressure being made on the olecranon, then immobilized in slight flexion by a posterior molded plaster splint extending from the proximal third of the upper arm to the distal third of the forearm, some cotton padding having been placed next to the skin, and the padding and splint being held snugly in place by sufficient bandaging. On 3/19/35 the arm was entirely comfortable and an x-ray film on that day showed considerably more smoothness of the joint surface along

the line of fracture, the elevated edges having been leveled off by the passive motion and pressure before the splint was applied.

On 3/23/35 it was noted that the splint allowed four or five degrees of movement at the elbow. This was, of course, a good thing for the joint to help prevent adhesions and stiffness of the joint. Slight active and passive movements were carried out that day and caused no pain in the joint. One week later active and passive movements of the elbow joint gave no pain until flexion and extension neared full normal limits.

Massage about the elbow joint was carried out, then the arm was splinted with the elbow in 90 degrees of flexion and placed in a sling. Three days later active and passive movement and massage were again done and the right angle splint replaced. During the next two weeks active and passive movements of increasing extent, massage, and diathermy treatments were applied to the arm and elbow joint twice each week and the arm was allowed to go unsplinted and unslung. By that time the arm had regained complete normal function without pain, except that extension would go to a straight line only instead of bending slightly backward in slight hyperextension as the other arm did naturally. In other words, the extension angle at the elbow was 180 degrees instead of about 184 degrees. Possibly in time this natural hyperextension range returned, although I did not see the patient later to check on this point.

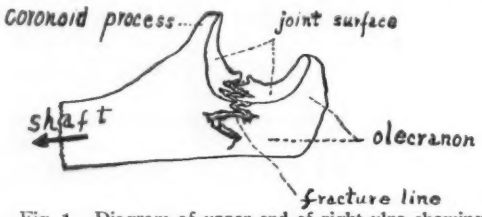

Fig. 1. Diagram of upper end of right ulna showing incomplete fracture of olecranon caused by hyperextension in bowling.

I have searched the literature back to and including the year 1879 and I found no record of this type of fracture of the olecranon; that is, fracture of the olecranon by hyperextension of the arm at the elbow joint. It was readily seen that such a mechanism of fracture of the olecranon was a rare occurrence, and it must certainly be even more rare that such a mechanism would be brought about by the act of propelling a sixteen pound ball in bowling.

Causes of fracture of the olecranon by direct violence as a blow on the elbow, or a fall on the elbow, are frequent. Less frequently violent muscle pull on the olecranon by the triceps muscle with the arm more or less flexed has been given as a cause of olecranon fracture. Oftener both muscle pull and direct violence acting together may cause such a fracture. In all of these mechanisms, of course, hyperextension does not occur. Other causes found listed were motorcycle accidents, automobile accidents, trolley car accidents, and athletics, but the exact mechanism was not given. The impression given, however, was that these instrumentalities brought about the direct violence, the severe muscle pull, or both, and thus caused the fracture.

Specific mention that fracture of the olecranon could and does happen due to hyperextension was found in two instances, however. Dr. Kellog Speed in his book on "Fractures and Dislocations" published in 1916 and again in revised edition in 1935, says that "hyperextension of the forearm may also cause fracture of the olecranon because of the fact that the tip of the process

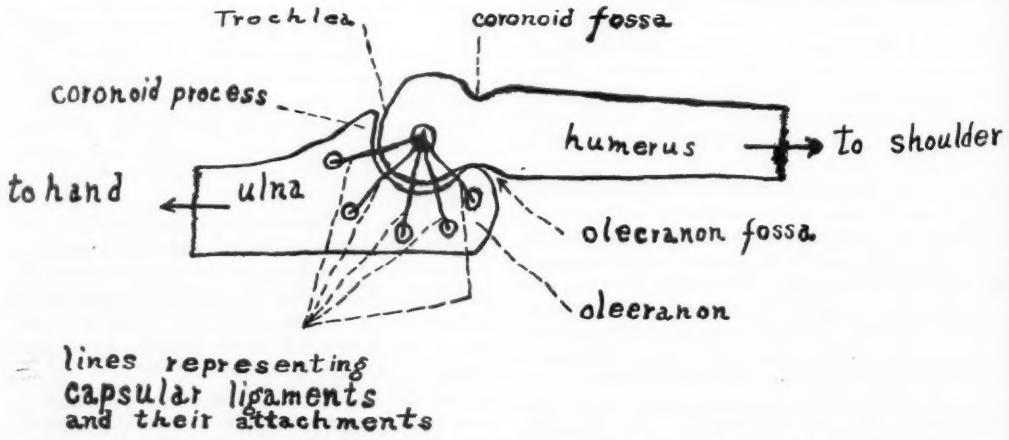

Fig. 2. Schematic representation of normal relations of structures at elbow joint with arm in normal complete extension.

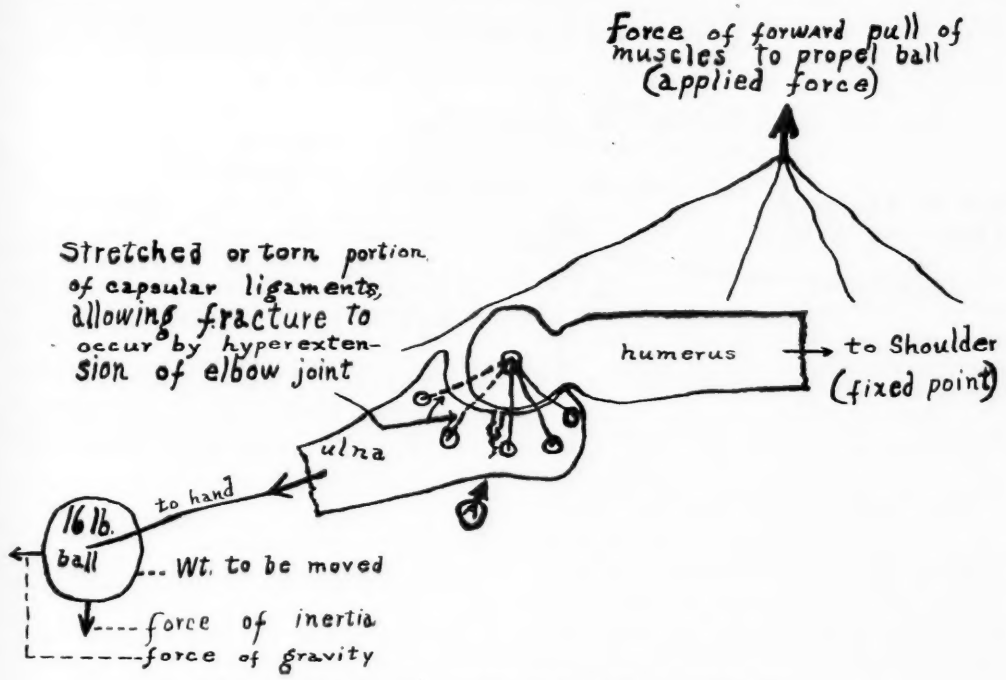
Force of forward pull of muscles to propel ball (applied force)
Stretched or torn portion of capsular ligaments, allowing fracture to occur by hyperextension of elbow joint
humerus
to Shoulder (fixed point)
ulna
to hand
16 lb. ball
Wt. to be moved
force of inertia
force of gravity

Fig. 3. Schematic representation of hyperextension and fracture.

impinges against the olecranon fossa of the humerus. Capsular stretching or tear permits the ulna to extend beyond its usual range, and the tip is split off from within outward. Fracture of a condyle or dislocation forward of the head of the radius may accompany this type."

Dr. Eldridge L. Eliason in his book on "Fractures of the Humerus, Radius, and Ulna," published in 1925, says that "cases are reported where the beak of the olecranon has been broken by hyperextension."

These two authors made no further comment concerning fracture of the olecranon by hyperextension. Many other authors whose texts I checked through on this subject made no mention at all of such a mechanism of fracture. They all give considerable information on olecranon fracture by direct violence, severe muscle pull, or both, however, and classify them by location as tip and neck fractures, and epiphyseal separation, the latter often occurring if the patient is under sixteen years of age, this being about the age at which the epiphysis unites by bone with the ulna. These fractures may be classified, as all fractures may be, as transverse, diagonal, comminuted, compound, or a chip fracture from the point of the olecranon.

Classifications applicable to fractures of the olecranon by hyperextension of the elbow joint would come under the following headings—first, complete and incomplete—with reference to the extent of the fracture through the olecranon; second, chip fracture from the tip of the olecranon and transverse fracture at or near the neck of the olecranon, these referring both to the location of the fracture and its direction. Separation of the epiphysis may occur if the patient be under sixteen years of age. I do not believe

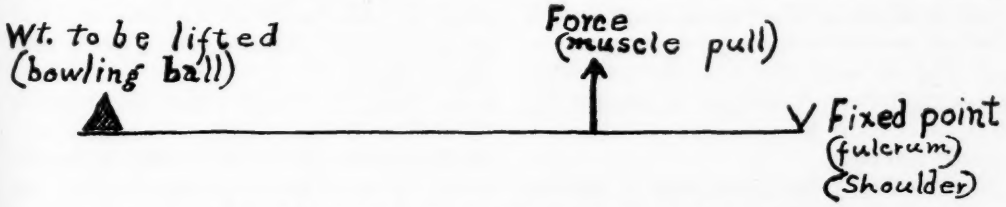

Fig. 4. Showing type of lever mechanism when arm is considered as one unit.

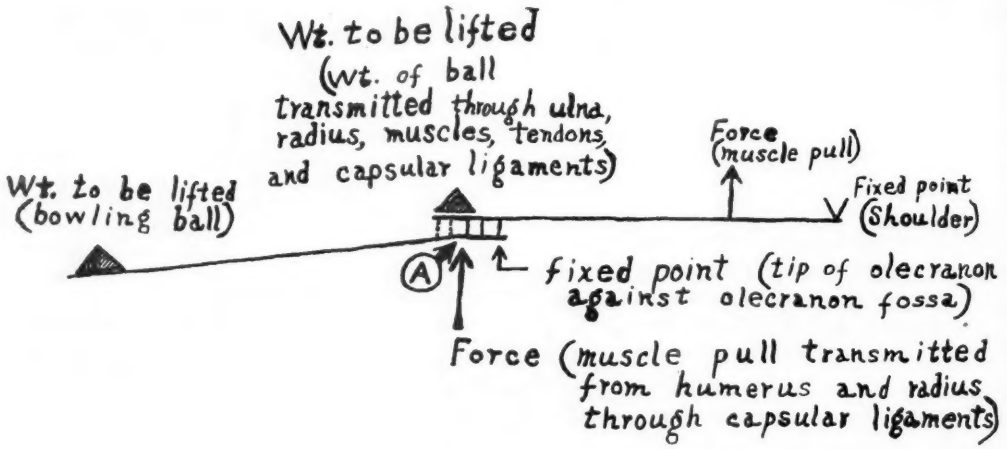
Wt. to be lifted
(wt. of ball transmitted through ulna, radius, muscles, tendons, and capsular ligaments)
Force (muscle pull)
Fixed point (Shoulder)
Wt. to be lifted (bowling ball)
A
fixed point (tip of olecranon against olecranon fossa)
Force (muscle pull transmitted from humerus and radius through capsular ligaments)

Fig. 5. Showing type of compound lever mechanism when compound nature of human arm is considered.

such a fracture would ever be directed diagonally except in the tip chip fractures, because the mechanism and the bone structure would hardly permit this. I feel certain, too, that such a fracture would never have any marked degree of misplacement or separation of the fragments except in cases in which the forearm was carried far in hyperextension by continued action of the hyperextending force. The capsular ligaments and the tendonous attachments of the triceps brachii and anconeus muscles tend very markedly to prevent any great separation of the fragments in all types of fractures of the olecranon. This fact often makes the treatment very simple, and maintenance of good position of fragments and subsequent bone union easy to obtain.

The sketches in Figures 2 and 3 will illustrate diagrammatically the mechanism that brought about the break in the continuity of the olecranon at the joint surface and outward extension in the case I have herein reported.

Figure 4 shows more clearly the type of lever action involved in the propulsion of a bowling ball if the entire arm be thought of as a single unit. A more nearly accurate illustration is given in Figure 5. Here we take cognizance of the fact that the lever is really a compound one and that the weak place is at the joint where the acting force or muscle pull is transmitted to the second distal lever through the ligaments, muscles and bones.

The ligaments distal to the point A, the neck of the olecranon in Figures 3 and 5, stretch or tear and the bone structure then gives way under the tension that falls on the volar side of the bone. In this case it seems evident that the patient failed to call into play a slight flexion action of the following muscles: biceps, brachii, brachialis, pronator teres, flexor carpi radialis, flexor carpi ulnaris, palmaris longus, flexor digitorum sublimis, brachio-radialis, and extensor carpi radialis longus, at the time the arm received the sudden pull forward by the following group of muscles: pectoralis major, anterior portion of the deltoid, coracobrachialis and biceps brachii. For the first group of muscles mentioned serve to flex the elbow and protect the elbow joint against hyperextension. Surely with such a large group of muscles doing their work of slightly flexing the elbow joint, or at least being brought into sufficient tenseness to bear their share of the tension when the second group of muscles suddenly began their endeavor to overcome the forces of inertia and gravity and bring the bowling ball forward, the capsular ligaments, especially the more distal ones as shown in the diagrams, would not have been called on to bear more strain than they were capable of standing, and hyperextension and fracture would not have occurred. In short, the first group of muscles failed to protect the skeleton against damage by sudden severe action of the second group of muscles, a failure of complete and accurate coordination of the muscle groups. Possibly this was due to their being under voluntary control of the brain—motor, sensory and psychic centers. In other words, the patient

failed to realize that such a protective action of the first group of muscles would be necessary until it was too late. This might be called a

Fig. 6.

lack of proper judgment or a lack of experience and training. It will be recalled the patient had not bowled for many months or years. The memory of how to go through with the activity remained clear enough in his mind, but the muscles had become untrained, or less well developed, or both. It will be noted that the biceps brachii muscle could and should have helped in the work of both groups of muscles.

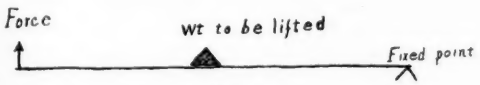

Fig. 7.

It will be seen, too, that the lever action involved here is the least efficient type of the three known types. Figures 6, 7, and 8 will illustrate the types of simple lever mechanisms in their ascending order of efficiency, the first being the least efficient and the type involved in the patient discussed above.

However, it is least efficient only when it is desired to lift a heavy weight with the arm straight and horizontal. In the action of throwing an object, if the object be not excessively heavy, the type of leverage exemplified in the human arm is most highly efficient to transmit speed and force to the object thrown. One could

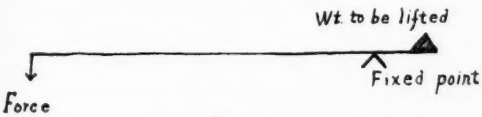

Fig. 8.

enumerate many other reasons why the type of lever action and the arrangement of muscles, bones, ligaments, joints, etc., in the human arm are such that they serve the entire organism in a highly efficient manner. The trouble in the case cited herein was that the great coordinator, the brain, did not serve the organism to the highest possible degree of efficiency.

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SUBPHRENIC ABSCESS

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Subphrenic abscess is not an uncommon condition. It is encountered rather frequently, but the diagnosis is often missed or delayed because the physician either fails to consider it as a possibility, or incorrectly evaluates certain signs and symptoms which are presented. The following case is presented because it illustrates certain characteristic diagnostic features commonly associated with abscess beneath the diaphragm. The use of artificial pneumothorax as a diagnostic aid is illustrated.

R. B., a male negro, aged forty-four, was admitted April 28, 1938. Occupation was letter carrier but he had been unemployed for the past two years. About April 25, 1938, he began to have pain in the lower right chest, more severe on cough or deep inspiration. A few days later he became short of breath. He gave a history of "stomach trouble" for the past eighteen or twenty years. In 1929 he consulted a physician who told him that he had a gastric ulcer. His symptoms subsided after a period of dietary and medical treatment but recurred again in 1931. He was again relieved after a Sippy regime. He was then symptom-free until 1936 when he began to have a gnawing pain in the pit of the stomach, occurring one-half to one hour after meals, relieved by food or soda. He was awakened frequently at about 1:00 A.M. by the pain, which required food or soda for relief. These symptoms gradually became worse until about the first of April, 1938, at which time the pain became quite severe and he began to vomit. During the week just prior to admission he vomited several times a day, become very weak and began to have chills and fever. He lost about fifteen pounds in weight in two months. He gave a history of hematemesis and tarry stools. The family and remaining past history were essentially negative.

Physicial examination on admission showed a semi-ambulant male negro, temperature 100.6° F., pulse 104, respirations 20, apparently acutely ill. Blood pressure 110/70. The only recorded positive findings at the time of the first examination were in the abdomen. There was moderate rigidity of the right upper quadrant. The liver seemed to be palpable about two finger breadths below the right costal margin. There was a suggestion of a mass in the right upper quadrant, and the entire right subcostal area was definitely tender.

Urinalysis April 28, 1938 showed 4 plus albumin, a

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moderate number of red and white blood cells. On the same date the red blood cells numbered 4,150,000. hemoglobin 80 per cent, leukocytes 14,600,, polymorphonuclears 76 per cent., lymphocytes 24 per cent. Blood Wassermann and Kahn reactions were negative.

X-ray studies of the gastro-intestinal tract May 2, 1938 demonstrated a persistently deformed second portion of the duodenum, interpreted a duodenal ulcer.

The patient was placed on medical management for duodenal ulcer. He became progressively more toxic with temperatures of 102 to 103° F. daily. On May 16th there was more severe pain in the right chest, worse on deep inspiration. An x-ray examination of the chest revealed an acute inflammatory process at the right base, suggestive of serofibrinous pleurisy.

A special chest consultation was requested and is summarized as follows: The right side of the chest lags. Tactile fremitus is absent at the right base. Voice conduction markedly diminished at the right base. Thoracentesis was done at the time of the examination and 500 c.c. of straw-colored, serous fluid were removed and 400 c.c. of air injected into the pleural space. The patient was then taken to the x-ray room, placed on

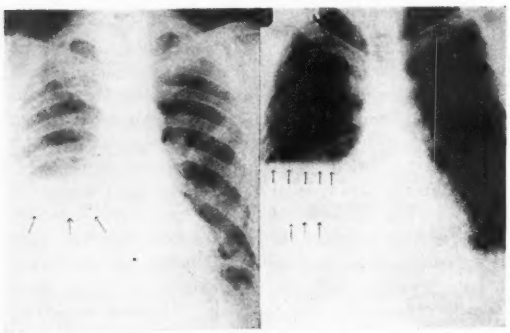

Fig. 1. Film showing effusion in right chest, presented at time of chest examination.

Fig. 2. Potter-Bucky film of chest following partial aspiration of pleural effusion and injection of 400 c.c. of air. Arrows indicate two fluid levels.

the unaffected side with head down so that the air in the pleural space might rise and lie next to the diaphragm, and an AP exposure was then made (Figure 3). This was done because it was the opinion of the examiner that the basic pathology was below the diaphragm. These plates confirmed the diagnosis of right subphrenic abscess.

Operation was advised and was done on May 21, 1938. No attempt was made to localize the abscess by aspiration prior to operation. Under local anesthesia a small exploratory incision was made through the upper right rectus, over the right lobe of the liver. This was done because of the marked tenderness just below the right costal margin. Through this incision it was determined that the abscess was walled off by dense adhesions between the diaphragm and upper superior surface of the liver, just above the costal margin. This incision was closed, the patient turned on the left side and a portion of the eighth rib resected in the anterior axillary line. The periosteal bed was markedly thickened. Layer by layer incision showed that a free pleural space was not being traversed. An opening was made directly into the abscess cavity and a large amount of pus evacuated. Three Penrose drains were placed in the cavity and the wound packed open with mercurochrome gauze.

There was rapid improvement following this procedure. The temperature did not rise above 100° F. after operation and remained normal after the twelfth postoperative day. Drains were removed on the twenty-second day and the wound was healed and drainage stopped on the twenty-eighth day. Following the operation he was given appropriate ulcer treatment and the gastro-intestinal symptoms disappeared. Patient was discharged from the hospital July 27, 1938. He has since remained in good health.

This case presents all the findings usually characteristic of a fully developed subphrenic abscess, and we feel that for that reason it is somewhat unusual, if not rare. It can easily be seen that at one period in the development of this condition the outstanding findings and symptoms pointed to a chest condition (pathological changes above the diaphragm). Improper evaluation of the findings might lead to a serious mistake in diagnosis, so serious in fact as to result in the patient's death, due to lack of correct treatment.

ETIOLOGY

It has been said that subphrenic infection is much more common than generally supposed, most of the infections subsiding spontaneously without being recognized or without developing into an abscess.[1]

In general, the sources of subphrenic infection may be (a) intra-abdominal, (b) blood-borne, (c) or extension of intrathoracic infection. In a large series of cases Ochsner and Graves[1] determined that the primary lesion was located in the abdomen in the majority of cases, 90 per cent. or more. About four per cent. were due to blood-borne infection and approximately three per cent. were due to extension of intra-thoracic lesions through the diaphragm. In two other cases seen in Hines Hospital during 1938, one was secondary to perforated peptic ulcer; the other followed appendicits and peritonitis, which had been operated upon elsewhere. In the latter case autopsy showed in addition to an anterior subphrenic abscess, a localized abscess in a loop of small bowel and a small lung abscess just above the diaphragm. According to various writers about one-third of all subphrenic abscesses are due to appendicitis and about one-third are due to perforating lesions of the stomach or duodenum. The focus in 12 per cent. of the cases

is located in the liver and bile passages. It has been stated that subphrenic abscess occurs in about 1.5 per cent. of the cases of acute appendicitis.

Subphrenic abscess is much more common in males than in females. The figures vary somewhat in various reports, but in general the ratio is about 70 per cent. males and 30 per cent. females.

Ireland[2] concluded that subphrenic abscess is not common in children, but that the clinical course is substantially the same as in adults. He reported six cases in children, four following acute appendicitis, one following rupture of a gastric ulcer, and one following lobar pneumonia.

The subphrenic space may become involved following abdominal suppuration in one of the following ways:

1. Invasion from immediate vicinity.
2. Extension from the pelvis or right iliac fossa by way of the gutter between the ascending colon and lateral parietal peritoneum to the right kidney region and then to the subdiaphragmatic area.
3. Up anterior abdominal wall by way of local abscess extending directly to the anterior superior surface of the liver.
4. Extension on up retroperitoneal cellular tissue.
5. Rupture of liver abscess.
6. Through lymphatics.

Both the inferior and superior surfaces of the liver are richly supplied with lymphatics, as in the under surface of the diaphragm. Lymphatics have also been demonstrated passing from the liver to the diaphragm. This fact explains the mechanics of one of the complications of subphrenic abscess which will be mentioned later. Truesdale[3] states that the lymphatics are the common carrier of infection from the peritoneal cavity to the liver and diaphragm. Knowing that the general flow of lymph is upward, it is easily understood that infection from an appendix to the subphrenic area would go by the following route:

Appendix
Appendicular lymph notes
Ileocecal nodes
Lymphatic trunk following superior mesenteric vein
Liver lymphatics
Diaphragm.

SYMTOMS

There is no symptom complex which is invariably diagnostic. Neither are clinical pictures presented by various cases always similar. Either abdominal or thoracic symptoms may be outstanding. The systemic symptoms are those of continued sepsis, fever of the spiked variety, and sustained leukocytosis. Pain is variable in location, it may be in the lower chest or may be located in the corresponding shoulder, suggesting diaphragmatic pleurisy. Symptoms may arise from the complications. About 30 per cent. of the patients develop pleurisy on the homolateral side and may have typical pleurisy pains. Respiratory embarrassment may occur as a result of pleural effusion.

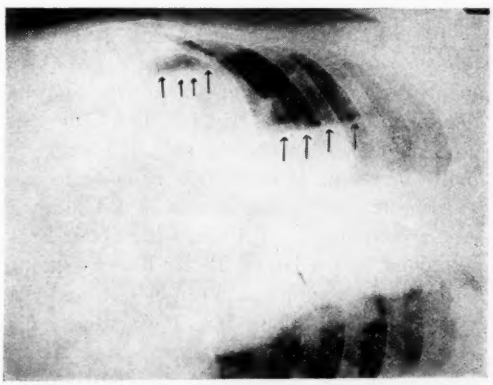

Fig. 3. Taken same time as Figure 2. Patient lying on left side with head depressed. Arrows indicate fluid levels above and below diaphragm; the former being due hydropneumothorax, the latter representing gas and fluid in the subphrenic abscess.

The diaphragm may become perforated at the site of the abscess with resulting empyema, providing the pleural space is not protected by adhesions at the site of the perforation. If there are solid adhesions and perforation occurs, a bronchial fistula may result, and the findings may suggest lung abscess.

DIAGNOSIS

We feel that the most important factors in the diagnosis of subphrenic abscess are the history and x-ray findings. The history must be painstaking and complete. The x-ray examination must be adequate. A single film of the region

involved is seldom diagnostic, as will be shown later. It will be noted in the case which we are reporting that on admission the presenting complaints were pain in the right lower chest, most severe on deep inspiration or cough, and shortness of breath. The increasing severity of these complaints led to the examination which established the correct diagnosis. Had this patient been treated as a possible tuberculous or "idiopathic" effusion the procrastination would have resulted in his death. However, the case was unmistakable when a thorough history was obtained.

Figure 1 is the chest film taken at the time of his chest examination and it shows evidence of pleurisy with effusion but no evidence of tuberculosis. There is nothing in the film as it stands to suggest subphrenic abscess and had the x-ray examination stopped here, the diagnosis might not have been made. It is suggested that a minimum of three films be taken in cases of suspected subphrenic abscess: A PA film with regular technique, a PA film with Potter-Bucky technique, and a lateral Potter-Bucky exposure.

In Figure 2 a fluid level can be seen under the righ diaphragm. This is a Potter-Bucky film. However, it cannot positively be stated that the lower fluid level is UNDER the diaphragm.

Figure 3 shows a film of the same patient after aspiration of the pleural fluid and injection of air. The patient was placed on the sound side with the head of the table deeply depressed at the time of exposure. The film clearly visualizes the diaphragm. There is a fluid level above due to effusion. Beneath the diaphragm there is another fluid level, indicating subphrenic abscess.

Often rigidity of the abdomen is found. Ochsner states that tenderness over the eleventh rib is very characteristic of posterior subphrenic abscess. Tenderness is often found on firm pressure over the lower ribs anteriorly if the abscess is anterior.

It is well to note that while a fluid level beneath the diaphragm is diagnostic in connection with other findings, it can be seen in only about 15 per cent. of the cases. It is well to remember that the fluid level is not diagnostic unless seen on the right as a level of fluid in the stomach may be seen on the left.

Lilenthal[4] points out that pneumoperitoneum is of aid in making a differential diagnosis. He states that air may be injected into the peritoneal space and a film taken in the upright position. If an air bubble is seen under the diaphragm, subphrenic abscess may be ruled out because no inflammatory reaction is present between the liver and the diaphragm. The practice of using an aspirating needle to diagnose subphrenic abscess is condemned. Either peritonitis or empyema may result from its ill-advised use.

TREATMENT

Early diagnosis is probably the most important factor in the treatment of subphrenic abscess. Drainage is indicated as soon as the diagnosis of abscess is made. The route of approach must vary in the individual case. As we have stated previously, attempts to localize the pus by aspiration are to be avoided. The extra-serous approach described by Ochsner[1] is probably the most satisfactory procedure for use in the majority of cases. In this method no serous membrane is traversed and the importance of this fact in draining a purulent focus is earily appreciated. When the abscess is located posteriorly the twelfth rib is removed and a horizontal incision is made across the bed of the rib at the level of the first lumbar vertebra. At this level the pleural reflection will be missed in every case. Blunt dissection is carried out with the finger upward, outside the peritoneum and beneath the diaphragm, until the abscess pocket is reached. A finger is plunged through the wall of the abscess and a drain inserted. If the abscess is located anteriorly the attachments of the anterior abdominal muscles at the costal arch are sectioned and blunt dissection outside the peritoneum is begun, continuing upward under the diaphragm, over the liver but outside the peritoneum. The abscess presents itself as a resistant inflammatory area into which a finger is plunged and drain tubes are inserted.

Preoperatively it is often impossible to localize the abscess exactly. As is illustrated here, cautious, gentle exploration through a small upper abdominal incision does no harm, and often enables the operator to tell just where to resect a rib. At times one will find that the abscess is walled off from the lower abdominal cavity and may safely be drained through an abdominal incision.

We favor the use of soft rubber drains. Stiff

tubing often causes pressure necrosis and further complications. Instances of perforation through the diaphragm due to pressure of this type of drain have been reported. The wound must be kept open until the cavity is obliterated and the drainage stops.

Irrigations are used, mostly because of their mechanical cleansing action. They should not be frequent and the use of irritating chemical solutions is to be avoided. We, however, do not favor their routine use, feeling they are not needed if adequate drainage has been provided.

The mortality of subphrenic abscess without operation is 90 to 100 per cent. With operation, the highest mortality is found when drainage traverses peritoneum or pleura.

CONCLUSIONS

1. A case of subphrenic abscess is presented.
2. The condition is discussed from the standpoint of diagnosis, etiology, symptomatology and treatment.
3. The use of artificial pneumothorax as a diagnostic aid is illustrated.

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TREATMENT OF HEAD INJURIES

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It is impossible in as short a time as is assigned to me today to cover this subject completely in detail, and I will not presume to be able to, but I shall endeavor to develop the important principles involved in the treatment of head injuries and the most usually accepted treatment as it is today. Skull fractures *per se* are not any more serious than fractures of other bones, and usually less so, because the complications of the fracture itself which may follow other bone fractures, such as non-union, malunion and deformities impairing the usefulness of the part, do not follow skull fractures. The injury to the contents of the cranium determines the seriousness of the skull fracture, its symptoms and also the treatment.

The anatomy of the skull is important in its relation to the pathology and treatment of head injuries. The adult skull is a closed compartment with some expansion possible at times. The vault of the skull is made up of membranous bone which lends elasticity to the skull and reduces the local effect of trauma by dissipating the most severe part of the force along radiating lines of fracture. The two tables of the bones of the vault with the intervening diploe, acting like shatter-proof glass, dissipates both local and radiating effects of the injury. The brain is not absolutely immobile but is only more or less fixed, and is set in motion after an injury applied to the skull, in that way striking itself against the skull. Fatal cases of brain injury occur in which skull fractures are not found but the brain is damaged by multiple small hemorrhages throughout. The pathology of injury to the brain is hemorrhage, edema and necrosis. The edema and consequent increase in brain volume interferes with the cerebrospinal fluid pressure. The increased intracranial pressure may be adjusted, but if it remains too great, then an anemia of the medulla results which first has the effect of stimulating the vital centers, and if continued it results in vasomotor and respiratory failure. At present some observers are beginning to think that all the symptoms of brain injury are not due alone to increased intracranial pressure but also to certain physiochemical changes in the brain cells resulting from trauma, and that the present treatment to relieve intracranial pressure is not all the treatment which eventually will be prescribed. Further work along this line will be necessary to develop a subsequent new routine therapeusis.

All traumas to the head, that is whenever trauma has been directed to the head with no matter how insignificant resulting apparent injury, must be considered as serious cases. Frequently a case with slight apparent damage at the onset may eventuate in a very serious case, so it behooves us to keep all such cases under observation for at least seventy-two hours before dismissing them as recovered. I have seen cases develop large epidural hemorrhages even beyond this period.

Read before the Sixty-fifth Annual Meeting of the Southern Illinois Medical Association, November 2, 1939.

Alcoholism is the frequent diagnosis made in cases which do not have very definite signs and symptoms of brain injury. I recall many such cases which occurred during my internship at the Cook County Hospital thirty years ago, when we did not recognize brain injuries as well as we do today, that were refused admission to the hospital, sent to the police station with the diagnosis of acute alcoholism and found dead in their cells within twelve hours. Autopsy would show skull fractures with brain injury. At present the estimation of the alcoholic content of the blood may assist us in the differential diagnosis, but we must always bear in mind that an alcoholic may and frequently does sustain a brain injury. It is very important that the condition be well evaluated early and that not too much or unnecessary treatment be administered during our first anxious moments.

The shock which accompanies all of these cases must first be treated. The patient should be put to bed immediately with either a heat cradle over him or hot water bottles about him. While in shock the patient should lie flat in bed; following the shock a moderate Fowler's position is maintained which frequently improves respiration and tends to prevent hypostatic pneumonia. Caffeine and strychnine hypodermically, and hot coffee and whiskey retention enemas are of value in the treatment of shock. In the severe shock cases from cerebral injury, blood transfusion may be given and the oxygen tent used. It is imperative that we do as little as possible in the stage of shock, except as may be indicated in the infrequent serious cases of epidural hemorrhages. One of the common practices is the immediate x-ray of fractures of the skull. This should not be done until the shock subsides, which usually is within six to twelve hours. Nothing is gained by the early x-ray of the skull and much may be lost by the unnecessary movement of the patient. I cannot emphasize too strongly the danger of early x-ray in injuries of the brain. It is necessary that restlessness be combated, else injury to the brain, as hemorrhage, may be increased. Bromides or one of the barbiturate derivatives may be given by mouth, or hypodermically, or chloral hydrate per rectum. Morphine sulphate is contraindicated because of its respiratory depressant effects.

The subsequent treatment following shock is dependent upon the clinical picture rather than the type of fracture which may be present. Close and careful nursing care is very essential; respirations, pulse, temperature and blood pressure should be recorded at least hourly and in some severe cases more often. At this time we must visualize the pathological changes in the brain following an injury. Edema of the brain with increase in brain volume occurs, resulting in a cerebral anemia and medullary compression with terminal paralysis of the vital centers. The cerebrospinal circulation is interfered with and varies with the blood pressure, but follows the venous more than the arterial pressure. The indications of this pathology for treatment are to restore the normal fluid and vascular pressures and reduce the increased volume of the brain from edema. Complete rest and quiet is very essential; visitors should be prohibited, and a nurse well trained in the treatment of head injuries should be in charge; that is, one who will not over-treat the patient and not keep him disturbed and in motion most of the time. A moderate Fowler's position is used. Ice bags to the head may be used from an empirical dictum. The intracranial pressure may be reduced, especially that which is due to edema of the brain by the use of intravenous injections of a hypertonic solution. In the past a hypertonic saline solution of five per cent. was used, but because of its rather severe reaction its usage has been discontinued. Solutions of 50 per cent. glucose or sucrose are now used, the latter because of its supposed more prolonged dehydration effect. Experimentally it has been shown that the cerebrospinal fluid pressure begins to fall within three minutes after 50 per cent. glucose is injected intravenously and continues for thirty to forty minutes when it reaches its minimum and so remains for two or three hours. Observers have recently demonstrated that in some cases the cerebrospinal pressure is unaffected by hypertonic solutions and may even raise the pressure. For an average adult 50 cc. of 50 per cent. glucose or sucrose is used, repeated every four hours until improvement occurs. Occasionally over-dehydration occurs, when headache, marked restlessness and vomiting appear on the fifth to seventh day. Therefore, the dehydration process is not innocuous but must be watched carefully for untoward symptoms. The dehydration is not sufficient to attain the desired

results, for after a time unless elimination of this excess fluid in the blood occurs, a reverse process appears and fluid is again put back into the tissues. For that reason elimination should be obtained through the bowels, skin and urinary tract. Fifty per cent. magnesium sulphate solution is used as retention enema, 150 to 200 cc. being injected slowly every three hours. Diaphoresis is obtained by keeping the patient well blanketed and by keeping hot water bottles about the body.

To increase the urinary output, of late I have used one of the organic mercury compounds intramuscularly, on the same basis as they are used for cardiac edema. I have not used them in a sufficient number of cases as yet to draw any definite conclusions, except that I believe that both from the academic viewpoint and clinical results so far obtained by them, eventually they may prove to be of therapeutic value. A precaution that always must be taken before their use is to exclude the presence of nephritis by a complete urinalysis.

The next procedure to be considered is the much debated spinal puncture. The majority of neurologists and neurosurgeons recommend the procedure. That a herniation of the medulla through the foramen magnum by release of the spinal fluid may occur is the most prominent argument against a spinal puncture. I have never seen this accident and, in a recent report of seven cases autopsied who had died of skull fracture and herniation of the medulla, six had not had a spinal puncture. This may be explained by the fact that a heavy waterlogged brain is more apt from its weight to push the medulla through the foramen magnum than a brain made lighter through spinal puncture. Some neurologists are advocating cisternal rather than lumbar puncture, the supposed advantages being that it is closer to the injured tissues, easier to perform and carries no more hazard than does the lumbar puncture. I believe that the danger of puncturing the medulla with the needle in cisternal punctures greatly increases the danger of the cisternal puncture over the lumbar.

When shall the puncture be done? Statistics show that the earlier the puncture is done, the lower the mortality rate. It is advisable, if possible, to wait until shock has subsided before making a spinal puncture, although this is not an absolute rule. Repeated convulsions and convulsions gradually involving more of the body may indicate puncture before shock has subsided. If shock has disappeared and coma or delirium persists, pulse slowing in rate, respirations increasing and the temperature is above 102 degrees, puncture should be done. Continued restlessness, delirium, slow pulse increasing in rate, rapid and Cheyne-Stokes respirations, and a persistent low diastolic pressure are all indications for a lumbar puncture. In brief, all cases showing subarachnoid hemorrhage and increasing cerebral pressure should have a lumbar puncture. No matter how desperate the case may be, if a puncture is indicated, it should be done, as these cases will die if let alone and some may be saved, so there is nothing to lose and everything to gain. It is rather inadvisable to do a puncture on a very restless or delirious patient who resists the puncture strenuously, because the excitement may raise the cerebral pressure to more dangerous levels and the resistance of the patient may cause the spinal needle to be broken off in the vertebral column, which is a serious accident.

A definite contraindication to lumbar puncture is extradural or middle meningeal hemorrhage. A manometer should be used in doing a puncture and only sufficient spinal fluid to reduce the pressure one-half should be removed at each puncture and never should the pressure be brought below ten mm. of mercury. The puncture should be repeated every six hours until the patient improves and the fluid pressure has returned to normal.

Subtemporal decompression, according to its most ardent advocates, is indicated in only ten per cent. of cases. It should not be done immediately and seldom before six hours after the injury. The longer the operation is deferred the better prognosis. When a patient does not respond to conservative treatment, indicating possibly large clots producing increased intracranial pressure, decompression may be done. The operation is performed on the side of the cranial injury, if such can be determined; if not, on the right side, as this hemisphere is silent. The mortality rate of this treatment is much higher than that of the conservative and lumbar-puncture type of treatment.

Escape of brain tissue from a fracture wound of the skull does not necessarily label that case

as fatal. If a fracture of the base is through the middle fossa with resulting loss of cerebrospinal fluid from the ear, it is necessary to keep the auditory canal free from infection. The canal should be cleansed of cerumen and blood clots, and then filled with either a 3.5 per cent. solution of tincture of iodine or some other antiseptic. The head is rotated and the solution allowed to run out and a sterile dressing applied over the entire ear. The canal should not be plugged with cotton or gauze which impedes drainage and predisposes to infection and resulting meningitis.

Now, as regards depressed skull fractures, usually these cases can be diagnosed without x-ray and, therefore, the shock should first be treated. Unless there is a massive depression or an escape of brain tissue through the fracture there is no indication to operate upon these cases immediately. If compounded, the scalp should be cleansed, bleeding points ligated and the wound sutured as early as the general condition of the patient permits. If symptoms of increased intracranial pressure are present dehydration should be instituted, and when the patient is in a favorable condition, sometimes as long as fourteen to twenty-one days after, an elevation of the fracture may be done. It is advisable, if possible, to elevate so that the fragment may be replaced.

When the depression is in the mid-line, the longitudinal sinus may have been injured and then plugged by clot and the depressed bone, so that on elevating the depression an active hemorrhage may result from reopening the wound in the sinus. Therefore, one must be prepared to suture the sinus in these cases. The most frequent indication for elevation in these cases is to prevent future adhesions between the brain, meninges and skull with resulting brain conditions, as epilepsy.

Middle meningeal hemorrhage shows a dilatation of the pupil on the side of the hemorrhage, motor weakness of the body in the side opposite to the dilated pupil, and a gradual onset usually with a lucid interval which varies in duration according to the severity of the hemorrhage. These cases must be operated upon, the clots removed and the bleeding vessel ligated.

Simple fissured fractures without increased intracranial pressure need only rest in bed for about three weeks. If symptoms of increased pressure appear, the usual conservative methods are used to combat it.

A word about x-ray findings. Many basal fractures will not be seen on x-ray films. Stereoscopic lateral and anterior posterior films should be made of both sides of the skull.

May I now show a few of the slides illustrating some of the points which I have discussed.

In conclusion may I present this brief resumé:

1. Treat the brain injury and the pathology resulting therefrom and forget the fracture.
2. Treatment should not depend upon the presence or absence of demonstrable fractures of the skull either clinically or roentgenologically, but only upon clinical symptoms of brain injury.
3. The shock should always be treated first; there should be no hurry for x-ray examination.
4. Conservative type of treatment by means of dehydration and lumbar puncture is indicated in the large majority of cases.
5. Further study of the physiochemical changes in the brain cells resulting from injury may establish certain facts which will greatly revolutionize our present idea of the treatment of brain injuries.
6. Each case should be treated individually; the patient and his injury should be evaluated and that type of treatment prescribed which is best fitted for it.

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ENDOCRINES AND THE GENERAL PRACTITIONER

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Practically every case of endocrine disorder is seen first by a general practitioner. Conversely, from 75 to 90 per cent. of the patients who consult general practitioners have, as one factor (often the only one) in the condition for which they seek medical advice, some major or minor disturbance of the endocrine functions.

It, therefore, behooves every general clinician to be thoroughly familiar with the signs, symptoms and management, not only of the major endocrinopathies, such as Graves' disease, Addi-

*Science News Letter, Feb. 14, 1939, page 73.

Read before Joint Session at Illinois State Medical Society, Rockford, May 4, 1939.

son's disease, acromegaly, involutional psychosis, cretinism and the like (which are relatively rare and easy to diagnose), but also of the minor disorders of the ductless glands, which are so common as to be almost universal, and so vague and elusive in their manifestations as to be overlooked more often than they are discovered.

We must never lose sight of the fact that, except in a jar of preservative on a pathologist's shelf, no endocrine gland is ever an isolated and individualistic organ. Always, in living men and women, these glands are constantly acting and reacting upon one another and upon the cells and functions of the rest of the body, especially the autonomic nervous system, to which they are closely akin.

So varied and complex are these glandular interrelationships that the well-known endocrinologist, Dr. R. G. Hoskins, of Harvard Medical School, has figured out* that the possible types and combinations of endocrine activity number no less than 14,000,000; so it would appear that there is still a wide field in which we may increase our knowledge of these organs, whose relatively small size is ridiculously out of proportion to their vast functional importance in the human economy.

We must not, however, permit ourselves to be dismayed by the immensity of the mass of presently undiscovered facts, whose study will engage future generations. There is readily available, *now*, sufficient clinically established information along this line to permit us to give our patients from 50 to 100 per cent. better service than most of them are now receiving, simply by making *daily and hourly use* of such knowledge as is already lying more or less dormant in the minds of most physicians, or can be obtained by a moderate amount of earnest, sincere, and continuous study.

In a brief paper like this, it would be sheer foolishness to attempt even to sketch the material regarding the major endocrinopathies, now embodied in scores of massive volumes which can be consulted in any reasonably complete medical library. I shall, therefore, confine myself, largely, to a general, practical, clinical discussion of a few of those commoner minor endocrine disorders (chiefly deficiencies) which play so large and important a part in the everyday work of all general clinicians, whether they know it or not, with an occasional mention of some point in the diagnosis or treatment of the more serious troubles which, in my opinion, has received insufficient attention.

CLIMACTERIC DISTURBANCES

The commonest of all departures from ideal health in which the ductless glands are involved are those of Warthin's "Major Involution," because these affect every man and woman who lives beyond the age of 45 or 50 years. Most of these people do not consult a physician unless some serious or disabling symptom develops, because the women expect to be uncomfortable during the "change of life," and the men do not know that they can have any such thing, and when they are seriously ill they have little or no idea what ails them, so that much medical sleuthing must often be done, on the basis of small clues, to discover the culprit. Many never seek professional advice at all, accepting their waning powers and waxing infirmities as an inescapable concomitant of growing old.

The physicians who equip themselves with knowledge, and study these cases with diligence and understanding, will soon have more practice than they can comfortably handle, for these folk who are facing the downward slope of life's hill are almost pathetically grateful to the man who can add life to their years (even if he cannot add many years to their lives), and the good news travels fast.

The cessation of menstruation is such a striking sign of waning gonadal function that it cannot be overlooked. Most women anticipate and watch for the appearance of the climacteric, or menopause, with dread, and many use it as an alibi for ill temper and other psychic symptoms, for which they wish to escape personal responsibility, or attribute to it the symptoms of some more or less serious disorder with which it has no connection, and so delay applying for treatment until the most favorable stage of the malady has passed. The symptoms of the normal climacteric in women are too well known to require comment, but should not be accepted, by the alert physician, without a complete and careful examination, as an explanation of all of the patient's complaints.

Men, as a rule, do not realize that they are subject to a climacteric at all, and unless or until they become afflicted with prostatism, refuse to admit, even to themselves, (to say nothing of telling it to the doctor), that they are no longer

young, until the progressive failure of their general power, perseverance, and potency has become so marked as to excite their active concern.

The symptoms of the climacteric in men (which occurs from five to 15 years later than in women) are somewhat similar, though less marked, than in the menstruating sex, and include peripheral circulatory disturbances ("hot flashes"), irritability, "nervousness," sometimes disturbed sleep; but especially a vague sense of slackening of the life force, diminution of interest in and capacity for concentration on the day's work and other matters that had formerly aroused enthusiasm, and, most conspicuously, a weakening or loss of sexual potency.

The taking of an adequate and enlightening history in these cases requires patience, diplomacy, and meticulous care not to overlook some definite disease state which may be responsible for a part or all of the symptoms.

Much help can be given to these uncomfortable, and frequently unhappy people, of both sexes, by means of *gonadal substitution therapy,* which, because it *is* substitution therapy, must be continued throughout life. The common aversion to constantly "taking medicine" can be removed by pointing out to these people that what they are taking is not *medicine,* but merely a highly specialized *addition to their diet,* as they might take vitamins (which are distinctly dietary adjuncts) in capsules, instead of adding large quantities of vegetables or milk or other foods to their menus.

For this purpose, true extracts of whole ovaries or testicles, which are now available, may be given by mouth, over long periods, with good results, in most cases. Sometimes it is well to supplement the oral administration with an occasional (once a week to once a month) parenteral injection of a suitable preparation of the appropriate glands. When the optimum dose, *for the individual,* has once been established, it is rarely necessary to increase it; but it is well to stick to the particular preparation on which the patient was started, as there are considerable differences in the potency and clinical assimilability of various preparations which may be equally meritorious in themselves.

Strangely enough (or perhaps it may not be so strange, after all), an elderly virgin, who receives little or no benefit from ovarian extract after a thorough trial, will sometimes blossom like a rose when given *testicular extract.* It is worth trying; but such patients should rarely be told that any *radical* change is being made in their treatment, and should *never* be told what they are receiving.

For men, a preparation of testosterone propionate has recently been introduced which stands between the oral and parenteral methods of administration, and, so far, seems to be giving satisfactory results in the treatment of the climacteric symptoms. This is known, in one of its commercial forms, as oreton ointment, and is applied by inunction.

Elderly men who are beginning endocrine substitution therapy should be explicitly told, so that they will not be disappointed, that, while it is fairly certain that it will increase their sense of general well-being and their capacity for and enjoyment of work or other activities, it may not (though it occasionally does) improve their sexual potency. Women who have been properly conditioned sexually, by loving husbands who are expert in erotic technics, generally retain their sexual desire and power of response rather better than their consorts, and frequently to an advanced age; and the best remedy for failing potency in a man is a long "second honeymoon" with an affectionate, understanding, and sexually well-trained wife.

It should also be noted that certain active preparations of the male sex hormone, frequently (but not always) produce good results in mild or moderate cases of prostatism.

In these cases, as well as in those of rather vague and relatively mild conditions of apparent endocrine subactivity, it is generally a good plan to supplement any specific treatment which may be prescribed with one of the reliable pluriglandular formulas which are now on the market.

HYPOADRENALISM

Second in frequency to the almost ubiquitous gonadal deficiencies (at least in middle life and beyond), are the deficiencies of the adrenals; and this is logical, because these glands are seriously taxed by all infectious diseases and by all emotional upsets, especially that chronic form of *fear* that we call *worry,* which seems to be so nearly universal in these days of stress and uncertainty.

The predominant symptoms of minor adrenal deficiency are a more or less vague sense of phy-

sical lassitude (often called laziness by the patient's family), and a low blood pressure, which should be verified by repeated tests, at different times of the day. There may also be a diminution of ambition and enthusiasm, largely due to the collateral failure of the gonadal hormones, and easy brain fag.

In these cases, much improvement will frequently follow the oral administration of active preparations of the adrenal cortex or of the whole gland, over long periods of time—months or years. The patient should be warned that he (or, more frequently, she) must not expect prompt and spectacular results, like those following a dose of castor oil, and should not look for noticeable changes in his feelings from day to day; but if he will compare the way he felt at the beginning of last month, with the way he feels at the beginning of this, the improvement will be fairly obvious. If the patient, or his physician, is at all in doubt as to what has caused the improvement, let him discontinue the treatment for two or three weeks, and note the result.

Since the adrenals suffer in all acute febrile diseases, it is good practice not to wait until the deficiency is obvious, but to begin reenforcing these glands early in the illness, by administering a readily assimilable cortex extract. An excellent preparation for this purpose contains a glycerite of adrenal cortex and reticulo-endothelial cells, and is known, commercially, as correlin.

In cases of muscular asthenia, where the blood pressure is relatively normal, so that there is doubt about specific adrenal deficiency, or even as an adjuvant in definite adrenal involvement, do not forget the virtues of glycine or glycocoll in these conditions. Gelatin contains about 25 per cent. of this amine, and from ½ to 2 ounces a day, of the dry substances, is a dose. It may be given more economically in the more concentrated form known as glycolixir (Squibb), in either tablets or liquid. Like opotherapy, this treatment takes from ten days to two weeks to show obvious results, but in the cases where it works (a high percentage), when it does take hold, the patient knows that something has definitely happened.

THYROID DISORDERS

True cretinism is so relatively rare that few general clinicians see more than half a dozen cases in a lifetime of practice, and frank myxedema is almost as uncommon; but cases of moderate hypothyroidism are frequently encountered.

Thyroid-deficient children have round, expressionless faces; a hard, shiny, infiltrated skin, with a blotchy appearance of the extremities; a weak, tremulous voice; a late and often imperfect puberty; and definite intellectual debility. Sometimes these hypothyroid children are thin, nervous, and hyperkinetic.[1] In such cases, look for delayed speech, deafness, behavior subnormalities, delayed bony development at the wrists and ankles, and increased blood cholesterol. In the mentally-retarded child, the thyroid factor should always be studied.

The hypothyroid adult grows more and more forgetful; becomes unable to concentrate on thinking, reading, or even listening; and loses his initiative and his power to make and carry out plans. These patients usually put on weight and appear sluggish, edematous, and ineffectual. Headaches are common. The hair is apt to be dry and brittle and the eyebrows sparse. A low basal metabolic rate, at several tests, establishes the diagnosis.

Intelligent thyroid feeding frequently produces dramatic results in these cases, and should always be tried. Prevention, however, is always the best treatment, and if all pregnant women, except those with Graves' disease, were given small or moderate doses of thyroid during the last three or four months of gestation, cases of cretinism and early minor hypothryroidism would soon become medical curiosities.

Today, hyperthyroidism also is a medical disease, in most cases, and can be handled by the informed general practitioner, especially if he will use the anti-goiter vaccine of Houda,[2] which is not nearly so well known as it should be.

PITUITARY DEFICIENCY

Lack or deficiency of the anterior pituitary hormones is concerned with the etiology of Mongolian idiocy and is the cause of Fröhlich's syndrome or *dystrophia adiposogenitalis*, the symptoms of which are dwarfism, genital infantilism, and adiposity of mons-mammary-girdle distribution. These children are small, fat, and fair; generally cheerful, contented, and sleepy; dislike active exercise and competitive sports;

and are slow in their reactions, so that they are often considered stupid, though their intelligence quotients are frequently above the average.

In later years these patients are sensitive about their small stature, their fatness, their retarded genital development, and their lack of physical strength and aggressiveness, and may react to these conditions by becoming moody introverts, or by actively anti-social behavior, as a defense mechanism.

In all hypopituitary cases, the finding of a definitely increased sugar tolerance is a help in making the diagnosis. Treatment with pituitary extracts, after a careful study of the individual case, may prove to be a valuable diagnostic, as well as a therapeutic measure. The earlier in life such treatment is begun, the better the prospect of bringing these patients to relative normality.

PERSISTENT THYMUS

Most physicians are aware, in a general way, of a rather rare condition known as *status thymlymphaticus,* from which babies and young children sometimes die suddenly and unexpectedly, but relatively little attention has been paid to what happens when the thymus gland, which should atrophy at puberty, persists into adolescence or adult life.

Physically, the hyperthymic adult tends to be frail and weak, with fragile bones, heterosexual configuration and hair distribution, delayed epiphyseal closure, a hypoplastic circulatory system, and low resistance to infections, particularly those of the respiratory tract.

What is much more important, however, the individual with a persistent thymus, whatever his chronologic age and size may be, is *still a child,* mentally, emotionally, and socially. These people never learn to control their reactions, to accept responsibility, or to conform to the criteria of conduct required by life in an organized society. In a recent study it was found, at autopsies on the bodies of 20 criminals (19 murderers and one rapist), that *all had persistent thymus glands.*[3] This does not *prove* anything, but it is important *evidence,* and suggests, in view of the present definite increase in juvenile delinquency, that every "problem child," before being sent to a reform school or to jail, should have the benefit of a thorough and intelligent study of his pituitary and thymic status. Many of the hypopituitary cases can be improved by treatment; and if the persistent thymus glands can be discovered before anti-social habit patterns have become set, it should be possible, at least in some cases, to cause regression of the gland by x-ray or radium irradiations.

SUMMARY

1.—Every active general practitioner sees a dozen or so patients every day, who have some minor endocrine disorders, and practically every major endocrinopathy is seen first by a general clinician, so every family doctor in the country, who is not already well grounded in the fundamentals of endocrinology, should lose no time in becoming so.

2.—Endocrine disorders are always pluriglandular, and we should never be satisfied with discovering the obvious.

3.—Pure, single hormones, given parenterally, have definite and important uses, but their effects are different from those of whole-gland extracts given by injection or by mouth, and cannot replace them in general clinical practice.

4.—The commonest endocrine disorder is the climacteric, in both sexes, and the well-informed physician can do much to make his middle-aged patients more comfortable and happier, and will be well rewarded for doing so.

5.—Definite organic disease may coexist with a glandular dysfunction, and no amount of enthusiasm for endocrinology should be permitted to betray us into overlooking such cases.

6.—All types of infections, as well as the stress and wear of modern life, tax the adrenals, so most of our patients need adrenal cortex support at one time or another.

7.—All endocrine therapy, except of the pharmacodynamic type, administered parenterally, acts slowly, and patients should be advised of this fact, so that they will not be impatient.

8.—The administration of thyroid extracts to all pregnant women would obviate most of the cases of thyroid deficiency in early life; and such extracts will frequently give much relief to adults suffering with such deficiencies.

9.—Houda's goiter vaccine is definitely curative in certain cases of thyrotoxicosis; and most cases of toxic goiter can be handled satisfactorily without surgery.

10.—Every "problem child" is entitled to a

thorough and intelligent study of his pituitary and thymus glands, as well as of his domestic environment.

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THE OPHTHALMOLOGICAL ASPECT OF DISTURBANCES OF THE ENDOCRINE SYSTEM

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There are times when the ophthalmologist sees a case of endogenous iridocyclitis which he treats locally with atropine and hot compresses and systemically with foreign proteins, sedatives and other medication. He knows that the disease is of systemic origin and therefore he refers the patient for a complete physical examination. Too often he receives no help because the teeth, tonsils, sinuses, gastro-intestinal tract, chest and other parts of the body usually examined show no abnormality and the Wassermann test and urinalysis may be negative. The internist and other consultants forget only too often or do not know that metabolic disturbances such as hypothyroidism or parathyroid deficiency may cause iridocyclitis, and the ophthalmologist himself may forget to ask for an examination of the endocrine system or may himself be unaware of a possible connection between endocrine diseases and ocular pathology. The same thing is true of cases of retrobulbar neuritis, optic neuritis, papilledema and other conditions where the ophthalmologist, after ruling out brain tumors, inflammations and other pathological processes in the neighboring structures hopefully waits for the discovery of an etiological factor by the general practitioner or specialists in other branches of medicine. The patient is checked over from head to foot but too often nothing abnormal is found. Sight may be permanently lost because we are apt to forget that disturbances of the genital system, especially disorders of menstruation, lactation and pregnancy, as pointed out by Fuchs,[1] may produce these and similar eye diseases. This is where the general practitioner, internist, and specialist in other fields often fail the ophthalmologist. The ophthalmologist is just as often at fault when he treats a case of intractable lacrimation or blepharospasm caused by hyperthyroidism or parathyroid disease by local medication or when he prescribes orthoptic exercises for a case of asthenopia resulting from menopausal disturbances. Most of us have become focal infection conscious but are not sufficiently conscious of the endocrine system. Part of this fault is due to the fact that the specialty of endocrinology is comparatively new as a specialty, and part to the fact that some of those practicing that specialty are inclined to be overenthusiastic in their claims. They ascribe every imaginable disease to a disturbance of the endocrine system and claim miraculous results from organotherapy in conditions that cannot possibly be affected by that or any other medical regime.

In trying to correlate the ocular findings with diseases of the individual glands of internal secretion the ophthalmologist is confronted by the same difficulty that confronts the internist in his evaluation of the role played by each gland in the production of the various endocrinological syndromes. Normally there is a definite equilibrium between the different endocrine glands. Secretion of one affects the others. Underactivity of the thyroid gland may, for instance, result in an overactivity of the pituitary gland and may have an inhibitory effect on the gonads and other glands. In that case one might find it difficult to ascribe the symptoms to the underactivity of the thyroid or gonads or to the compensating overaction of the hypophysis or some other gland. The same symptoms may also be brought about by pathological changes in one of several of the glands. Virilism in the female may be a result of a tumor of the ovaries, the cortex of the adrenal or a basophile adenoma of the anterior lobe of the hypophysis. Bearing this complicating factor in mind we can, nevertheless, in a general way classify the ocular findings of diseases of the various glands of internal secretion.

THYROID

Hyperthyroidism — The exophthalmus and some of the lid signs of exophthalmic goiter are among the best known ocular changes in endo-

Read before Joint Session at Illinois State Medical Society, May 4, 1939, Rockford.

crine disturbances. Exophthalmus occurs in about 80 per cent. of cases in adults and about 40 per cent. in children, is usually bilateral and is rendered much more obvious when accompanied by the Dalrymple sign, that is by a widening of the palpebral fissure. The exophthalmus may go unnoticed when the lids remain in their normal position, or a widened palpebral fissure may give the appearance of proptosis and for that reason measurements should be made with an exophthalmometer in all suspicious cases. The cause of the exophthalmus has been explained by various theories.

1. Thus Silcock,[2] in 1886, and others found, on microscopic examination, fatty infiltration and fatty degeneration together with cloudy swelling of the extra-ocular muscles. This weakening of the extra-ocular muscles together with a similar weakening of the tarso-orbital fascia and lids by the toxic action of the products of perverted metabolism are considered by some to be sufficient to permit a forward displacement of the lids by venous engorgement of the orbit.

2. Nafziger,[3] in 1933, found in cases of malignant or progressive exophthalmus, that the intrinsic eye muscles were three to eight times their normal volume, looked pale and showed cellular inflammatory changes. He considered these changes to be sufficient to explain the exophthalmus.

3. Bristowe,[4] Moore and others explain the exophthalmus on the basis of deposition of fat in the orbit and edema of the orbital tissues.

Less likely explanations are:

4. Engorgement of the orbital vessels due to vasomotor disturbances.

5. Sympathetic irritation of Landstrom's and Muller's orbital muscle.

6. Adrenal insufficiency.

T. G. Moorehead[5] noticed unilateral exophthalmus after administration of thyroid extract.

Of the lidsigns of exophthalmic goiter the most common are the Graefe sign which consists of a failure of the upper lid to follow the eye on slowly looking down or of following the eye downward in a jerky manner.

Dalrymple sign is a retraction of the upper lid resulting in a widening of the palpebral fissure and giving the characteristic terrified expression.

Stellwag's sign consists in an infrequency or incompleteness of winking.

Rosenbach's sign is a fine fibrillary twitching of the upper lid on gently closing the lids.

Griffith's sign consists of a retraction of the lower lid either alone or associated with a similar retraction of the upper lid.

Most of the lidsigns are a result of a spasm of the sympathetically innervated levator palpebrae superioris. A detailed description of these and other signs of exophthalmic goiter and their explanation may be found in a paper by the author published in 1934.

Moebius' sign consists in an insufficiency of convergence.

Pareses of the extra-ocular muscles are a result of the changes in the muscle fibres described above. Epiphora may be a result of vasomotor disturbance. It may precede the exophthalmus and it may, in some cases, be the result of mechanical displacement of the puncta by the proptosed globe. Dryness of the eyes may follow an earlier lacrimation and may be caused by a lessened excitability of the secretory fibres supplying the lacrimal gland. Ulcers of the cornea may result from dryness of the cornea because of inability of the lids to cover the eyes in marked proptosis, but may also be on a neurotrophic basis since they occur even when the lids are sutured together prophylactically. Optic atrophy may be on the basis of exophthalmic goiter and has been noted to follow prolonged use of dried thyroid gland as a cure for obesity. Ramsay[6] and others described optic neuritis and retrobulbar neuritis on the basis of hyperthyroidism.

Hypothyroidism — Increase of exophthalmus and the development of exophthalmus after thyroidectomy have been reported by Zimmerman,[7] the author[8] and others. The so-called malignant exophthalmus may very well be on a pluriglandular basis with special reference to the hypophysis and adrenal glands. In some cases there seems to be a definite relationship between hypothyroidism and myopia. Fuchs mentions this relationship and a few years ago Bothman[9] read a paper on this subject. I have seen several cases of progressive myopia in children with a low basal metabolism, one of them with —25, another with —12, in whom the myopia seemed to progress less rapidly or come to a standstill after thyroid therapy was instituted. Duke Elder[10] states that cretinism is almost invariably accompanied by myopia.

Fuchs[11] and others recognize the relationship between iridocyclitis and hypothyroidism and other metabolic disturbances. Multiple chalazia, edema of the lids, pigmentation of the skin of the lids, blepharoconjunctivitis are sometimes the result of hypothyroidism. Lemoine[12] described an edema of the macula and disc as a result of hypothyroidism, and Rudemann and others obtained good results in insufficiency of convergence and accommodation resulting from hypothyroidism by treatment with thyroid extract.

PARATHYROIDS

Parathyroid insufficiency with its accompanying disturbance of calcium metabolism leads to a hyperirritability of the neuro-muscular apparatus which manifests itself in tetany. Tetany cataracts are a well known clinical entity. The lamellar or zonular cataract developing in childhood as a result of convulsions in infancy is a good example of tetany cataract but anterior and posterior subcapsular cortical cataracts progressing to total lens opacity also occur. Two such cases in whom tetany and bilateral anterior and posterior subcapsular cataracts developed following thyroidectomy were operated upon for cataract last month at the Cook County Hospital. Vancea[13] reported three children aged respectively three, five and a half and eleven years with cataracts (two total, one zonular) apparently a result of myxedema with tetanoid status. Myopia, conical cornea, blue sclerotics, ciliary spasm, blepharospasm and persistent lacrimation may be a result of disturbed calcium metabolism.

HYPOPHYSIS

Tumors of the pituitary gland, if large enough, produce characteristic visual field defects. Bitemporal hemianopsia and total blindness in one eye, with temporal loss of field in the other eye are the most characteristic visual field defects. If the tumor enlarges sufficiently vision may be lost in both eyes. Extension of the tumor posteriorly may produce typical field defects such as homonymous hemianopia, and extension in other directions may give corresponding defects. The chromophobe tumors are the commonest. They produce visual field defects, impotence in the male and amenorrhea in the female. They do not respond to x-ray treatment but lend themselves well to operative intervention. Eosinophile tumors (involving the anterior lobe of the pituitary) are familiar as causing gigantism when they occur in childhood, and acromegaly when developing in the adult. They do not become very large but may be accompanied by visual field defects. They are radiosensitive. The basophile adenoma is very rare. The tumors are scarcely millet seed in size and therefore produce no pressure symptoms on the chiasma. It is a question whether they, or changes in the adrenal or ovary, produce the Cushing syndrome, fat trunk, virilism in the female, high blood pressure and osteoporosis. Rathke's pouch tumors produce bitemporal hemianopic field defects together with other changes such as diabetes insipidus, and thermal changes when they become large enough.

Engelbach[14] describes three cases of so-called pituitarism with recurrent hemorrhages into the retina and vitreous. I have seen an acromegalic patient with persistent lacrimation due to no other evident cause but the disturbance of the hypophysis.

Temporal pallor of the discs, later total descending optic atrophy, are the commonest fundus findings in pituitary tumors.

Cushman[15] and others described headaches and bitemporal constriction of the peripheral visual fields in pregnancy and obtained improvement in both with whole pituitary and anterior pituitary extract in most cases. Great caution should be exercised in evaluating small degrees of visual field loss since many of these patients are very suggestible.

PANCREAS

Diabetic retinopathy occurs in 5 to 20 per cent. of diabetics. It is characterized by small, sharply outlined, discrete and confluent gray retinal exudates in the posterior polar region and retinal hemorrhages, the most characteristic of which are of the minute punctuate type. The retinopathy occurs in people past middle age and is usually accompanied by more or less marked retinal angio-sclerosis. In children and young individuals lipemia retinalis may be present in severe diabetes with a blood sugar of 5 per cent. or more. The retinal arteries are pale and the veins which normally are darker than the arteries approach the latter in color. Typical diabetic cataract occurs in young indi-

viduals, up to the age of thirty-six years, while the incidence of cataract in patients over sixty years is greater in diabetics than in those who have no diabetes. Changes in refraction occur not infrequently in diabetes. This is a result of changes in the aqueous sugar content which, according to some authors, acts directly on the lens by increasing the osmotic activity, while according to others it causes a swelling of the ciliary epithelium and a relaxation of the zonular fibres. The change in the refraction may be in the direction of an increase in the myopia, so that a hyperopic eye may become less so or a myopic eye more myopic but an increase in hyperopia can also occur. Iridocyclitis and chronic retrobulbar neuritis are well known complications of diabetes. Extra ocular muscle palsies also occur, especially when the diabetes is associated with hypertension and arteriosclerosis. Grafe states that the prognosis for recovery from the palsy is bad in these cases.

GONADS

Ovarian dysfunction or removal of the ovaries leads to premature presbyopia according to Guillot.[17] This possibility should be borne in mind in doing refractions in middle-aged women. Vague complaints such as momentary blurring of vision, inability to use the eyes for near work, a feeling of heaviness of the lids, etc., may be accompanied by no definite errors of refraction or only by low degrees of muscular imbalance. The muscle balance tests may be normal but fatigue occurs after moderate use of the eyes. The eye symptoms then may be much like the general symptoms in these patients and relief will be obtained only on proper endocrine therapy.

Pregnancy, lactation and menstrual disturbances may cause acute retrobulbar neuritis or even papillitis and papilledema. Conjunctival hemorrhages, episcleritis, and iridocyclitis are known to accompany menstrual disorders.

Vogt and others believe that certain forms of cataract (coronary cataract) develop at the age of puberty and some writers go so far as to believe that gonadal hypofunction is the cause of senile cataract.

ADRENALS

Hypofunction of the adrenal glands (Addison's disease) is sometimes accompanied by a dark pigmentation of the conjunctiva and even cornea. The pigment, according to Amirle's[18] and Matsuoka's[19] histological examinations is melanin. A. L. Brown[20] found, in addition to pigmentation of the conjunctiva a dark gray pigmentation around the discs and maculae which he explained on the theory that these parts of the fundus are more exposed to strong light and therefore, like the exposed portions of the skin, they become pigmented. His patient had a low intra-ocular tension (12 and 14 Hg. Schiotz) and widely dilated pupils as a result of sympathetic irritability. Myopia and glaucoma have been attributed to deficiency of the adrenal glands.

LIVER

Night blindness and xantopsia may occur in diseases of the liver. In Hirschberg's case the yellow vision recurred with each menstruation. Numerous other eye lesions, as ennumerated by von Szily[21], have been ascribed to a disturbance of the endocrine system.

COMMENT

There is no doubt that many eye diseases are a result of a disturbance or disease of the glands of internal secretion. Some of them, like diabetic retinopathy and proptosis in exophthalmic goiter are universally recognized to be on that basis. We are likely to forget however, that others such as iridocyclitis, idiopathic blepharospasm, accommodation insufficiency and many others may also be caused by an endocrine disturbance. It would be well if an examination of the endocrine system were made part of the routine physical examination when searching for a possible systemic cause of diseases of the eye such as iridocyclitis, papillitis, retrobular neuritis and others. The ophthalmologist should also bear this etiological factor in mind when treating intractable cases of asthenopia, epiphora, blepharospasm, recurrent chalazia and other conditions that persist in spite of the usual medical management. In some of these the endocrine disturbance is the actual cause of the eye disease while in others it throws the reparative defense mechanism out of equilibrium so that the usual medication is of no avail.

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ROENTGENOLOGICAL MANIFESTATION OF ENDOCRINE DYSFUNCTIONS

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INTRODUCTION

Soon after the discovery of Roentgen, anatomists realized that the new rays would enable them to study the skeletal development in the living subject. It was not until recently, however that enough material was collected to allow them to establish with sufficient accuracy the normal growth of the skeleton. While this work of collecting radiographic records of growing children was being done it was discovered that certain children showed a bone age entirely different from their real age. Endocrinologists were able to correlate the retarded or accelerated bone growth of these children with dysfunctions of their endocrine systems.

In a general way it is possible to divide the endocrine dysfunctions which affect skeletal growth in two great classes: (a) dysfunctions which accelerate growth, making bone age greater than the real age, and (b) dysfunctions which retard the growth of the skeleton, making the bone age less than the actual age of the patients.

For the sake of clarity it must be understood that the terms "acceleration of growth," and "retardation of growth" refer only to time and not to the length of the bones. For instance eunuchoids are as a rule quite tall while they show retardation of growth because of late epiphyseal union.

Paper presented at the Illinois State Medical Meeting, Rockford, Illinois, May 2-4, 1939. Read at Joint Session.

DYSFUNCTIONS WHICH ACCELERATE SKELETAL GROWTH

Hyperfunction of the adrenals, of the pineal gland and of the gonads results in an acceleration of the skeletal growth in young subjects. All these dysfunctions are also characterized by precocious development of the external genitalia, with early puberty and correspondingly early mental development. The demonstration of the advanced bone age of these children is easily done by examining roentgenograms of the wrist. The slide shows the wrist of a five-year old patient with cortical adrenal hyperfunction in which the bone age was between 13 and 14 years. The next slide shows the patient himself as compared with a normal boy of 14. The following slide shows the wrist of another patient, a girl with a granuloma cell tumor of the ovary who had a bone age of 17 years and an actual age of 12. This patient menstruated at five months and showed public hair and mammary development at two years.

Roentgenograms showing accelerated growth of the skeleton do not give any clues as to whether the adrenals, the gonads or the pineal gland are the cause of such abnormal development. A careful clinical examination is therefore imperative and it must be remembered that the direct roentgenological investigation of the endocrine system may give valuable information; this will be discussed later in this paper.

DYSFUNCTIONS WHICH RETARD SKELETAL GROWTH

Retardation of bone growth is mainly due to hypofunction of the thyroid, of the hypophysis or of the gonads.

In juvenile myxedema the children are of small stature, obese, with retarded mental development; the skin is dry, the hair scanty and coarse, the face flat, puffy and the tongue unusually large. The slide shows a boy with myxedema whose real age was 13 years and whose bone age was only about six months. Lesser degrees of hypothyroidism may not affect the skeletal growth to a marked extent but many cases of coxa vara have been recently attributed to hypofunction of the thyroid gland.

Hypofunction of the hypophysis also produces a marked retardation of the growth of the skele-

ton but these patients do not show the puffiness or obesity of myxedema. They are of small stature but slender; while their mental capacities are not impaired they always show an arrest of their sexual development. The slide shows side by side an 18-year old patient suffering from hypophyseal hypofunction and a normal 18-year old boy. The following slide shows that the bone age of this patient is only 13 years.

While the hypofunction of the hypophysis and that of the thyroid usually result in dwarfism, the hypofunction of the gonads produces individuals of normal or excessive stature, slender, with flat chests, long hands and feet. The genitalia and secondary sex characteristics remain infantile and puberty may never occur. The epiphysis may not unite until 30 or 35 years of age and the skeleton has thus a chance to continue to grow. The slide shows one of such patients, a pre-adolescent eunuchoid 34 years of age, compared with a normal 34-year old woman. The following slide shows normal nuclei but there is lack of union of the radial epiphysis.

In addition to endocrine dysfunctions the skeletal growth may be disturbed by other conditions, such as rickets, achondroplasia, renal dwarfism and Mongolian idiocy. All these conditions have characteristic clinical symptoms and some show unmistakable roentgenological signs which help to differentiate them from the known endocrine diseases.

ROENTGENOLOGICAL MANIFESTATIONS OF ENDOCRINE DYSFUNCTIONS IN ADULTS

The influence of the endocrine glands on the skeleton does not cease with the cessation of the skeletal growth. In the last few years it has been definitely demonstrated that the hyperfunction of the parathyroid glands produces a marked loss of calcium in the adult bones accompanied by the formation of bone cysts and occasionally by spontaneous fractures. The slides show that this decalcification of the skeleton is quite characteristic and consists of a granular mottling, especially observed in the vault of the skull and the diaphysis of the long bones. The skeletal decalcification is accompanied by a great increase in the calcium level in the blood and this may lead to the formation of kidney stones. The slide shows this renal pathology as demonstrated by the roentgenogram. Acromegaly, another disease of adult life, also causes marked skeletal changes. The slide shows, in addition to the sellar destruction, the enlargement of the facial sinuses and of the jaw occurring in this disease. Hands and feet also enlarge.

The hyperfunction of the basophilic portion of the pituitary gland and the hyperfunction of the adrenal cortex result in a similar clinical syndrome and both can produce a most marked degree of osteoporosis. Marked osteoporosis is also occasionally observed in advanced cases of exophthalmic goiter.

In the adult myxedematous patient there is another change which can be recognized by the roentgenologic examination and consists of an enlargement of the heart which will recede with the administration of thyroid extract.

DIRECT ROENTGENOLOGICAL INVESTIGATION OF ENDOCRINE GLANDS

The direct investigation of the endocrine glands is a rapidly growing field of roentgenology.

Because of its position in the bony sella turcica the hypophysis was probably one of the first glands to be explored with the roentgen ray; it was soon found that pituitary tumors would almost always cause a destruction of the floor of the sella or of the clinoid processes or produce a concentrical sellar enlargement. The slide shows one of such cases.

The pineal gland is roentgenologically invisible in children and adolescents but it becomes visible in about 50 per cent. of the adults because of calcium deposits. Once this gland becomes visible it also becomes of great roentgenological importance because its position, normally quite constant, may be altered by intracranial growths. Tumors of the pineal itself are susceptible of direct roentgenological diagnosis only when they are calcified. The slide shows one of these rare growths. Frequently, however, pineal tumors give no direct roentgenological signs or only the indirect signs which are common to all intracranial growths of sufficient volume such as increase of the digitations of the calvarium, pressure erosions of the sellar floor, or displacement of the calcium deposits which usually mark the normal position of the pineal gland.

The thyroid becomes of roentgenological in-

terest only when it hides itself behind the sternum. The slide will show that it appears in the roentgenogram of the chest as an enlargement of the anterior upper mediastinum with frequent displacement of the trachea.

Parathyroid tumors are seldom large enough to be palpable in the neck but occasionally they may reach such volume as to plunge into the anterior upper thorax where they cannot be differentiated roentgenologically from an intrathoracic thyroid.

The roentgenological diagnosis of thymic hyperplasia has recently been subject to much well founded criticism. From the evidence presented so far there seems to be no doubt that the so-called thymic syndrome has been greatly overemphasized. From a roentgenological diagnostic standpoint one must remember that a large upper mediastinal shadow in a roentgenogram of the chest (such as shown by the slide) does not always mean an enlarged thymus, because the width of the upper mediastinum changes greatly with the position of the patient and with the phase of respiration, and becomes quite large when the children cry due to the engorgement of the venous vessels. A great amount of caution should be exercised before a diagnosis of thymus enlargement is expressed, especially because such a diagnosis is usually followed by roentgen therapy and this may have untoward effects later in life.

The roentgenological diagnosis of adrenal diseases has been recently added to our armamentarium. In Addison's disease one often finds calcifications in the adrenal regions such as shown by the slide. Hypertrophies and tumors of the adrenal may be diagnosed because of the displacement of the underlying kidneys or by producing an artificial contrast around the glands by means of the injection of a gas in the perirenal space. The slide shows a case of hypertrophy of the right adrenal cortex with Cushing-like syndrome. The following slide shows a medullary tumor which caused paroxysmal hypertension.

CONCLUSION

In conclusion it may be said that there are many cases in which roentgenological studies of endocrine diseases are indispenable and of capital importance; in many other cases roentgenological studies may prove to be of great help to supplement the clinical symptoms and support the clinical diagnosis.

SUMMARY

The author discusses the roentgenological manifestations of endocrine diseases. He presents illustrative roentgenograms of cases of tumors and dysfunction of the hypophysis, enlargement of the thymus, enlargement and dysfunction of the thyroid, tumors of the parathyroid glands, enlargement and tumors of the adrenal glands and endeavors to establish the indications for the roentgenologic examination.

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X-RAY THERAPY AS APPLIED TO THE MORE COMMON FORMS OF DISTURBANCES OF THE ENDOCRINE GLANDS

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Heinz. Langer[1] stated, "If a roentgenologist intends to treat diseases of the glands of internal secretion, it is well for him to realize that a tremendous field for exhaustive study lies before him, before he may even think of actually treating some of his trusting patients with roentgen rays."

Gordon[2] says, "The necessary requisite for radiotherapy directed against any endocrine gland is primarily a knowledge of the underlying existing disease, but unfortunately, that is not always possible, at the present time, with endocrine disorders. At the best, any present endocrine treatment must be empirical."

Langer[1] further states, "if we understand by 'empirical' that every effort and every laboratory test has been made to accomplish the right diagnosis, and that the examination and symp-

Read before Joint Session, Illinois State Medical Society, May 4, 1939, Rockford.

toms point to a certain gland of internal secretion being in a stage of overactivity; if all efforts are made to rule out infections or other diseases which might influence an overactivity in these glands, then by reason of the meager knowledge we have about the diseases of internal secretion, an empirical treatment may be allowed." In addition consultation should be made with the internist, neurologist, and others who might give aid in the diagnosis.

Cawidies[3] states, "That the action of physical agents on endocrine function is effected through four distinct mechanisms, acting often in combinations, (1) the ionic equilibrium mechanism, (2) skin endocrinotropic mechanism, (3) the nervous reflex mechanism, and (4) the direct glandular mechanism. X-ray produces these effects through a depressing influence."

The glands considered here are the pituitary, the thyroid, the parathyroids, the thymus, the adrenals, and the ovaries. Time and space are too limited to enter into a discussion of the anatomy, physiology, and pathology of the disturbances of these glands, as they can be readily obtained from any standard text.

The disturbances of the endocrine functions for which the pituitary gland is treated are essential hypertension and diabetes mellitus, amenorrhea, sterility, menopausal symptoms and tumors.

Hutton[4, 5, 6, 7] and others believe that essential hypertension and diabetes mellitus are due to some functional abnormality of the pituitary and adrenals or both. They have applied small doses of x-ray to these glands and report that about seventy-five per cent. of the cases improved symptomatically. They have found that the dosage of x-ray is very small and the method of treatment is as follows: 120 KV., 3 Ma., 2 Mm. Alum. filter, and 50 cm. skin target distance. With these factors fifty "r" are deliyered to each side of the pituitary through ten by ten portals and to the adrenals through a common portal fifteen by fifteen centimeters. Three treatments are given at weekly intervals and if there is not a drop in pressure the dosage is increased to seventy "r" to a portal. They stated that about one-third of the cases received no benefit, one-third slowed symptomatic improvement with a little change in the carbohydrate tolerance, and one-third obtained symptomatic relief and marked improvement in carbohydrate tolerance. The reduction in blood pressure was from twenty-five to one hundred points. Other authors report approximately the same percentage of symptomatic relief.

In the treatment of amenorrhea and sterility, Kaplan[8], uses the following technique: 200 KV., 4 Ma., filter Cu. ½ plus A1-1, and distance thirty to forty cm. Two pituitary fields six by eight and four pelvic fields nine by twelve or ten by fifteen centimeters are used. Seventy-five to one hundred and fifty "r" measured in air are delivered per field. One treatment per week is given for three weeks. In a series of one hundred and twenty-eight married women menstruation was established in seventy-six, and forty-four became pregnant. He noted no harmful effects of treatment and the children born to these women were normal mentally and physically. Ford[9] reported menstruation was established in twenty-six of the forty-seven cases treated. Of twenty-nine cases treated for dysmenorrhea, he states that relief of pain was noted in eighteen. The duration of relief was variable, but results were as long as three and a half years. He states that repetition of treatment at intervals of three months or longer has not adversely affected ovarian function.

The treatment of menopausal symptoms with x-ray has been widely used, and the usual symptoms of sweating, vertigo, hot flashes, and headaches were relieved. The pseudo-arthritic pains, often present, are not affected by treatment.

Geist[10] reports seventy-five patients treated and twenty-five used as controls with results as follows: Ninety per cent. lost the temporal hair, in eighty-five per cent. sweating was markedly decreased, in seventy-five per cent. headaches improved or disappeared, in ten per cent. palpitation on exertion was improved. Pseudo-arthritic pains were not relieved. It was found that improvement was not actually of a permanent nature, but lasted from intervals of some two to six weeks. A few of the cases received as many as seven series of treatments, but it was not deemed adviable to continue any further treatment. The technique of the treatment used was: 180 KV., Ma. 4, Cu. ½ plus A1-1, and distance 40 cm. Six by eight centimeter portals were used on the right and left temporal and frontal re-

gions. One hundred and fifty "r" was delivered to each area.

Zollinger and Vaughn[11] reported, "That thirty-five per cent. of the cases of menopausal symptoms improved by x-ray treatment."

The indications for treatment of tumors (adenomata) of the pituitary as given by Pohle[12] are evidence of early pressure signs without signs of advanced optic atrophy. He recommended Pfaher's technique which is as follows 200 KV., ½ to 2 mm. of copper filter, 40 to 50 cm. focal skin distance, and 4x5 cm. portals on each temporal region and through the frontal and interocular regions. He says in cases of slowly developing symptoms it is advisable to use the relatively small doses over a longer period of time, using seven hundred and fifty "r" in air as an erythema dose. He states that twenty-five to fifty per cent. of the erythema dose through each portal, and repeated weekly, can be given or if the tumor has been operated upon and relief of intracranial pressure established, the dose can be increased to three hundred and fifty "r". Two fields are treated daily or every second day until the total dose amounts to one thousand and fifty "r" per area. This dosage is apparently sufficient to induce regression in "adenomata."

X-ray treatment of the thyroid gland is now an established procedure. Brahm[13] states, "That toxic adenoma should be treated by x-ray, rest, diet, and medical means in cooperation with the surgeon in preparation for a thyroidectomy and that an exophthalmic goiter (Graves' Disease) is best treated by x-ray in conjunction with the internist." Severinghaus[14] urges the use of radiation when need for haste is not apparent or the operative risk is poor. He states that radiation results are usually obtained from one to three months following treatment and that the end-results of x-ray treatment are as good as with surgery. He further states that recurrences are known with both methods. Newman and Garland[15] use the following technique: 200 KV., Cu. ½ plus A1-1, 50 cm. distance, one anterior field 14x17 with trachea covered with a narrow strip of lead, administering 200 "r" every second or third day, up to a total dosage of 2000 "r" in air. They reported the following results and conclusions: "While we are not presenting the x-ray and iodine therapy of hyperthyroidism as the only, or even under all circumstances as necessarily the best form of treatment, we feel that it has the following to recommend it. (1.) It will result in 60 per cent. cures as evidenced by: (a) disappearance of the symptoms of hyperthyroidism; (b) economic restitution; (c) basal metabolic rate of plus 10 per cent. or below; (d) basal pulse rate of 80 or below; (e) gain of weight to near former average. (2.) In another 28 per cent. it will afford marked improvement. (3.) Thus, in well over 80 per cent. the results are satisfactory. (4.) There is no direct mortality nor complication to the treatment. (5.) The patients are usually ambulatory and often continue working during treatment. (6.) It is speedy; definite improvement often occurs by six weeks and usually by three months. (7.) If it fails after a reasonable trial, surgery can be employed. (8.) It can, at times, be applied to patients who for economic or psychological reasons refuse to consider surgery."

The parathyroid glands are usually treated for hyperfunction which may be due to a simple hyperplasia or to tumor formation. The overactivity of the glands is usually manifested in a more or less generalized osteitis fibrosa cystica with elevated blood calcium and a lowered phosphate elimination in the urine.

Pohle[12] and other authors report excellent results by radiation. The technique of treatment is two anterior and two posterior fields over the neck, 180 KV., 4 Ma., filter Cu ½ mm. plus A1-1, and distance 30 cm. Seven hundred "r" are given to each field allowing an interval of two days between the applications to each field. A second series may be given three to four months later. If this does not produce any results surgery should be undertaken.

The usual conditions for which the thymus gland is treated are hyperplasia, status lymphaticus and lymphosarcoma.

Kerley[16] in a group of twenty-seven normal children, gave prophylactic treatments through an anterior and posterior field, thirty-five "r" being administered per field. The cases were given three treatments at intervals of three to seven days. He concluded, that irradiation of the thymus in infants and young children produces no retardation of physical growth or mental development.

Pohle[12] states, "That generally the enlarged thymus gland is observed from the first week after birth to about the second year, but it still can be found much later than childhood. There

is no doubt that the enlargement of the thymus gland can cause death directly or indirectly." The recommended technique is 120 KV., 5 Ma., 25 cm. distance, 3 mm. Alum. filter, and portals 4x5 cm. over the thymus area. One hundred and fifty to two hundred and eighty "r" may be given. The treatment may be repeated at the end of four weeks if the films still show enlargement of the thymus. The improvement of symptoms may begin as early as twelve hours. The treatment should not be repeated as long as signs of improvement are seen. The treatment of status lymphaticus is the same as for enlarged thymus, except that the treatments may have to be repeated at intervals.

In the treatment of tumors of the thymus, particularly thymoma, the tumor must receive a dose of at least seven hundred "r," but usually in children it is not possible to effect complete regression without damaging future development of the child.

Suprarenal glands are treated for hyperactivity, usually caused by tumor formation, and for neurocirculatory asthenia. Their treatment in hypertension has already been discussed. The treatment of the suprarenals has also been used in conjunction with the treatment of hyperthyroidism. The technique in treating tumors is 200 KV., 5 Ma., filter, Cu. ½ mm. plus A1-1, distance 50 cm. and 10x10 portals over the adrenal area. Each field receives three hundred and fifty "r" given on successive days. The treatment may be repeated at intervals of four weeks, if improvement is noted.

The treatment of the ovaries is absolutely contraindicated in pregnancy. The conditions which are usually amendable to radiation are benign uterine hemorrhage, painful menstruation, fibromyoma, chronic infections of the uterus and adnexa, and carcinoma of the breast. In treating painful menstruation, the dosage is comparatively small, usually one hundred and fifty "r" is given over one anterior and one posterior field using 200 KV., 5 Ma., filter ½ Cu. plus A1-1, 50 cm. distance, and 15x15 portals. Chronic infections of the uterus and adnexa are treated in the same manner.

Siefert[17] believes, "That radiation of chronic infections of the female genital tract may save surgical removal of the genitalia in young individuals." Benign uterine hemorrhage and uterine fibroids are treated with 200 KV., 5 Ma., ½ Cu. plus A1-1, 50 cm. distance, and 15x15 portals. One anterior and one posterior portal is used and radiation is given at the rate of two hundred "r" per portal, allowing two to three days between treatments. Eight hundred to twelve hundred "r" administered to each portal will usually produce satisfactory results. The treatment of the ovaries in cases of cancer of the breast is recommended by Witherspoon[18, 19, 20] and others. It is believed to be of especial benefit in young women who have not reached the menopausal age. A castration dose has to be administered and this dose is variable according to age. According to Pohle[12], it requires, in women from twenty to twenty-five, thirty-one and nine-tenths per cent. skin erythema, and decreases to twenty-two and four-tenths to sixty, to produce permanent menopause using 200 KV., with ½ mm. plus A1-1.

CONCLUSIONS

From the foregoing review of the experiences of numerous physicians with the use of radiation in the treatment of endocrine disturbances, it will be noted that correct diagnosis is most essential and stressed by all of them. None of them believe that radiation should be undertaken, except after the most careful study and examination of the patients, and this is only obtained by using all available methods and consultations with the various specialties.

It is believed that radiation applied in a careful and intelligent manner will be of decided and distinct benefit in these conditions.

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THE EYEGROUND IN HYPERTENSIVE AND RENAL DISEASE

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Ophthalmoscopic examination gives us the unique opportunity to observe in great detail and in the living body an entire vascular system, and this examination gains in importance when the question of a generalized organic or functional alteration of the blood vessels arises. Systematic observation of the retinal vessels has added considerably to the understanding of the hypertensive and renal diseases, and gives valuable information concerning their diagnosis, differential diagnosis, and prognosis.

One of the most frequently encountered forms of hypertension is the so-called benign essential hypertension. While the systolic blood pressure is considerably increased, the diastolic pressure remains normal or rises only slightly, and the renal function is undisturbed. It is mostly an affliction of older people. There is a decrease of elasticity of the large arterial branches throughout the body, which makes reception of the blood volume at each heartbeat increasingly difficult, and leads to a passive dilatation of the peripheral arteries, arterioles, and capillaries, including those of brain and retina.

The ophthalmoscopic picture in the very early stage of this type of hypertension is often normal. Soon, however, signs of the hypertonic fundus develop, which permit the experienced ophthalmologist a rather early diagnosis of benign esential hypertension. The hypertonic fundus is characterized by the following features:

1. The retinal arteries and veins are moderately distended and coarsely tortuous. This dilatation of the arterial and venous vascular tree can be traced to the smallest, ordinarily scarcely visible branches, thus their number seems increased.

2. The retinal venules have a corkscrew appearance (Guist, Salus).

3. The normal ratio of the arterial to the venous diameter is altered from the normal of 2:3 to 2.5:3, or even 3:3 Thiel).

4. The reflex stripe on these widened arteries also becomes wider and of a yellowish color, a condition which is commonly called a "copper-wire" artery, and which is thought to be already a sign of incipient arteriosclerosis.

5. An important diagnostic sign is the hypertensive arc at the vascular crossings, first described by Gunn, but correctly interpreted by Salus. This hypertensive arc differs from the arteriovenous compression in simple arteriosclerosis. It may be produced merely by spastic contraction of the artery, without visible sclerotic changes of the involved blood vessels. It is characterized by an apparent narrowing of the vein before and after the crossing, without congestion of the peripheral portion of the vein. The vein simply evades the direct pressure of the rigid artery by deviating backward into the retina (Salus, Friedenwald). While the absence of this sign does not exclude the existence of arterial hypertension, especially the intermittent forms, its presence is pathognomonic of it.

At this stage two other retinal conditions come into consideration for differential diagnosis. One is the congenital tortuosity of the retinal vessels, the other is the cyanosis retinae found in congenital heart disease and in polycythemia vera.

In the later stages of benign essential hypertension the fundus picture is characterized by a progressive retinal arteriosclerosis and its consequences, in addition to the hypertensive findings. Further complications of this retinal vascular disease may be occlusion of venous branches, or even of the central vein (Koyanagi, Salus).

What conclusions as to course and prognosis of the patient's general condition can we draw from the study of the fundus? To answer this question, the age of the patient has to be considered. If these fundus lesions are found in older people, which is usually the case, the degree of retinal vascular sclerosis and its rapid or slow progress may be considered an indicator of similar processes taking place in other organs as brain, kidney, or heart. In spite of the sometimes rather severe retinopathy, these patients

Read before Section on Eye, Ear, Nose and Throat, Illinois State Medical Society, Rockford, May 3, 1939.

may live for many years, and they do not die from renal insufficiency but from cerebral or cardiac complications of the cardiovascular disease.

It is different in the younger individual with benign essential hypertension. Here an increase of diastolic pressure may set in gradually, as the arterioles have so far preserved their ability to respond to the over-extension of the prearterioles by increase of their tone. Thus a transitional form to the malignant essential hypertension gradually develops, with generalized spastic contraction, at first, of the arterioles, and later of the arteries, and a high diastolic blood pressure (Volhard).

The malignant esential hypertension or malignant nephrosclerosis, in which both the systolic and diastolic blood pressure are considerably increased, and renal function in the later stages is progressively impaired, is characterized by a generalized contraction of the arterial vascular tree, beginning with the arterioles and progressing to the larger branches.

The ophthalmoscopic picture in the early stages of this hypertension is also characterized by:

1. A uniform contraction of the retinal arterioles and arteries, which may be so marked that at the first glance one seems to see nothing but veins.

2. The relation of the arterial to the venous diameter now approaches 1.5 : 3 or 1 : 3. If one follows the course of such an artery from the disc toward the periphery, one finds that its larger branches are barely visible, and the arterioles appear wiped out altogether.

3. The arterial reflex stripe becomes more intensely white, giving the artery a "silverwire" appearance. This contraction of the arteries is at first of spastic nature, and intermittent spasm is sometimes observable with the ophthalmoscope.

4. At the vascular crossings there are usually well developed hypertensive arcs.

5. The retinal veins retain at first their normal caliber, except for slight narrowing of the venules, but they never show the corkscrew appearance seen in the benign essential hypertension.

—A prolonged contraction of the arterioles leads to slowing of the blood stream and insufficient nutrition of the vessel walls, which results in an increased permeability of the walls. The first evidence of this damage is edema of nervehead and retina, and later hemorrhages and aluminous and fibrinous exudates, which appear as more or less extensive yellowish or greyish white patches. As the retinal arteries are end arteries, also the nutrition of the retina suffers, and clinical manifestations of this damage are degenerative lesions of two types: 1. Brilliant white, small, sharply defined lesions, which by confluence may form arborescent figures. The underlying pathology is an infiltration with fatty granular cells.

2. Fluffy, dull white areas with serrated margins, which are caused by hypdropic degeneration, the so-called ganglio-form degeneration of nerve fibres.

The ophthalmoscopic picture in this end-stage of the malignant hypertension is a fully developed hypertensive neuroretinopathy, to the characteristic features of which a marked degree of visible angio-sclerosis is usually added. This sclerosis is most marked in the retinal arterioles. Not infrequently choroidal sclerosis is visible in the periphery of such fundi, causing "bead string" pigmentations.

The presence of a fully developed angiospastic neuroretinopathy in malignant hypertension is of grave prognostic import as to the life of the patient, and statistics show that few patients live longer than 18 months to two years after its development.

The question arises, what other diseases produce the ophthalmoscopic picture of hypertensive neuroretinopathy? The answer in general is all those in which arterial hypertension is associated with a generalized contraction of the arterioles of the body. The most classical example of such a condition is the acute, diffuse, glomerulonephritis. The first ophthalmoscopic sign is again a contraction of the retinal arterioes and arteries, and after some time the other features of the neuroretinopathy develop. As the contraction of the arteries is at first spastic, the retinal symptoms may completely disappear if recovery from the renal disease and hypertension takes place.

If the acute glomerulonephritis does not subside, but gradually passes into the subacute and chronic forms, the functional condition of the retinal arteries gradually gives way to permanent alterations of the vessel walls, which are clinically visible as more less pronounced angiosclerosis. The first transient retinal symptoms re-

appear and become intensified. Development of a neuroretinopthy in chronic glomerulonephritis, just as in malignant nephrosclerosis, gives a grave prognosis, as it is indicative of such a high degree of generalized vasoconstriction that complete renal insufficiency and uremia are imminent.

Another condition which may produce an angiospastic neuroretinopathy is toxemia of pregnancy. As in the acute glomerulonephritis, the first opthalmoscopically visible symptom is a spastic contraction of the retinal arterioles and somewhat later of the arteries (Wagener, Selinger). If this contraction becomes generalized, and persist, neuroretinal edema and other changes develop rapidly. Up to a certain time, which may vary from days to weeks, complete regression of the retinal findings may be expected if the pregnancy is terminated and the blood pressure returns to normal. If too much time passes after the spastic condition of the retinal vessels has once been confirmed, irreparable damage to retina and vessels is done, the evidence of which is a progressive and intensified neuroretinopathy. Therefore frequent ophthalmoscopic examination of patients with toxemia of pregnancy, especially in the early stage, is imperative.

One of the most interesting points to the ophthalmologist as well as the internist is the question whether certain fundus findings coexisting with and modifying the picture of hypertensive neuroretinopathy permit any conclusions as to the origin of the hypertensive disease, i.e., whether it is:

1. A malignant development of benign essential hypertension, a socalled transitional form, or; 2. A malignant essential hypertension in malignant nephrosclerosis, and development of a primary contracting kidney, or; 3. The end-stages of a chronic nephritis, a secondary contracting kidney.

Although this question cannot be answered absolutely in the affirmative, there are certain findings whose presence or absence suggest certain types of hypertension.

Ad. 1. In the transitional form, there is in addition to the features of the neuroretinopathy a permanent corkscrew appearance of the venules, a condition which was produced during the benign stage of the hypertension by elongation of the small veins, which is not reversible. This finding is always absent in the other types of hypertensive retinopathies.

Ad. 2. The picture produced by malignant hypertension on the other hand often differs from that in acute and chronic glomerulonephritis, and toxemia of pregnancy. The edema of nerve and retina appears greyish and semi-transparent, and there is not infrequently a marked swelling of the optic nerve head, such as one is accustomed to find in choked disc. Exudates in the retina around the nervehead are less extensive than in nephritic disease. Accompanying arteriolar sclerosis is more marked in malignant hypertensions.

Ad. 3. In acute and chronic glomerulonephritis and toxemia of pregnancy the exudation is more extensive, more massive, and appears whiter, perhaps due to its more fibrinous character, which is prominent in the histologic preparations. The retinal vessels have a greater tendency to be maximally contracted in these conditions than in essential hypertension. In chronic glomerulonephritis one often has the additional findings of secondary anemia, which may be quite marked, and manifests itself in a pallor of the edematous nervehead and in hemorrhages with light centers as found in other severe anemias.

It is evident from the preceding discussion that ophthalmoscopic examination has to be made in great detail, and usually repeatedly, to be of maximum value. Important information as to diagnosis, differential diagnosis, and prognosis of many diseases, especially the renal and hypertensive group, may thus be obtained.

7427 So. Shore Dr.

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DISCUSSION

Dr. Elias Selinger, Chicago: Dr. Klien's presentation was most able, the discussion describing the fundus changes and their significance, while the original paintings showed both the fundus and histologic changes. Clinicians generally agree on the clinical significance of the fundus changes in hypertension. There is no difference of opinion on the interpretation of these findings but there is some difference in regard to the classification of the various hypertensive diseases. Personally I prefer the classification in which the first group of Dr. Klien's cases which she refers to as benign hypertension in old individuals is placed in the group of arteriosclerotic hypertension, since here the condition is brought about by sclerosis of the larger vessels. The term essential hypertension is reserved for a special entity. Some clinicians divide essential hypertension into benign hypertension and malignant hypertension, depending upon whether the vessel changes are functional in character, so that they are still reversible and for that reason the patient will again, under treatment, show a normal blood pressure, or whether the changes are organic in nature, so that a return to normal is impossible. We then have a more or less continuous picture of hypertension. Essential hypertension, the type that is found in young and middle aged individuals, generally begins as a spastic contraction of the smaller arteries and arterioles. This is the result of vascular reaction to toxic substances, possibly produced by the kidneys, possibly coming from other sources. As a result of this contraction, the heart has to do extra work, and in that way the hypertension is brought about. Soon there is thickening of the media of the arterioles and small arteries, but up to this point the process is still reversible, and for that reason this stage is referred to as benign hypertension. Sooner or later organic changes develop, such as fibrosis and sclerosis of the media, and hyperplasia of the internal elastic lamina, and then the process has become organic, is not reversible, and the typical fundus picture of malignant hypertension may become evident.

This same process takes place in other areas of the body and seems to be particularly marked in the kidneys. For that reason the disease is sometimes referred to as malignant nephroclerosis. The histologic vascular studies carried out by Anderson, Keith, Kernohan and others in this country have been beautifully illustrated by Dr. Klien in her fundus paintings, and paintings of histological specimens. Rosenberg of the Mayo Clinic recently described the findings in the brain in cases of malignant hypertension. The vascular changes are similar to those found in the eyegrounds. Not infrequently the changes in the ocular vessels are indicative of similar changes in the cerebral vessels. Rosenberg examined histologically the cerebral vessels from seventeen cases of malignant hypertension and found beside the typical vascular changes, other changes such as petechial and larger hemorrhages, and in some cases massive hemorrhages into the ventricles. Those cases that showed marked change of the nerve head, which comprised 11 out of 17, had either increase in the spinal fluid pressure or edema of the brain. According to Pickering, an increase of cerebrospinal pressure above 25 cm. of water in these patients is very significant, since the life expectancy in these patients is only ten months.

From the ophthalmoscopic point of view the hypertensive changes in the fundus manifest themselves, as Dr. Klien pointed out, in vascular changes, later in sharply circumscribed exudative and degenerative changes in the retina, and when nephritic damage becomes evident as a result of the marked vascular change in the kidneys, then the so-called cotton wool exudates will be added and edema of the nerve head will form part of the ophthalmoscopic picture. Dr. Klien mentioned intermittent spasms of the arterioles. This is an important clinical finding as it indicates that the vessels have as yet no marked organic changes, and for that reason the prognosis in these cases should be better. Once in a while we come across a patient who shows typical hypertensive vascular changes in the eyegrounds and yet the blood pressure is normal. Such patients frequently have a cardiac decompensation so that there actually is a relative hypertension.

Closing the discussion of the paper, "The eyeground in hypertensive and renal disease:"

Bertha A. Klien, Chicago: Dr. Selinger mentioned one of the difficulties we have in talking about hypertension, i. e., its classification. Volhard's classification was used as the basis for this paper, but the terminology of hypertension is of minor importance in the practical application of the knowledge gained by detailed fundus examination regarding the diagnosis, differential diagnosis, and prognosis of the individual case.

THE USE OF PROGESTIN IN OBSTETRICAL COMPLICATIONS

FREDERICK H. FALLS, M.D.
Professor of Obstetrics and Gynecology, University of Illinois College of Medicine, Chicago
CHICAGO

For the past fifteen years or more, in connection with my teaching program, I have defined pregnancy as a physiological internal glandular dystrophy. I have done this to impress upon the students the important part played by the glands of internal secretion in the process of reproduction. Recent research has supplied abundant proof of the correctness of this conception. Certain pathological states occurring during pregnancy can best be explained by the assumption of dysfunction of some of the endocrine glands. Since it would take us too far

Presented before the Illinois State Medical Society at Rockford, Illinois, May 4, 1939.

afield to cover even sketchily the important relationship of all of these glands to the process of reproduction, I have chosen for discussion a single hormone (progestin). I will try to point out some of the facts regarding its action on the human uterus and how this knowledge may be applied clinically in the treatment of patients manifesting certain obstetrical abnormalities.

Progesterone is the hormone extracted from the corpus luteum. It has an inhibiting action on uterine contractions and it produces, when injected into suitable immature test animals (rabbits), a progestational change in the endometrium. We have recently established the fact that certain oily extracts have an inhibiting action on uterine contractions which have been previously stimulated by pituitrin. We have further shown that the water soluble substances in the early preparations of corpus luteum extract contain appreciable amounts of progesterone and can be used clinically in certain obstetrical complications. The object of this paper is to demonstrate the action of this hormone on the living human uterus in situ and to point out the clinical application of the knowledge thus obtained.

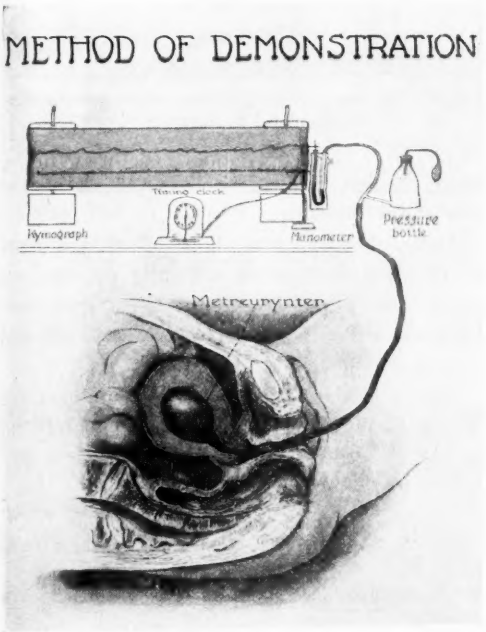

Fig. 1. Method of demonstration.

Figure 1, the method used was essentially that of Moir which consists of placing a rubber balloon in the uterus of a woman seven days post partum and recording the uterine contractions by means of a kymographic tracing. Pituitrin was used to stimulate active uterine contractions. The promptness of action of the various progesterone-containing preparations is readily seen from a study of the tracings. When pituitrin is injected alone the uterus promptly responds by developing rhythmic uterine contractions which continue for at least an hour or two without change in rate or rhythm. If now pituitrin is injected in the same amount and is followed by an injection of one rabbit unit of progestin (oily extract), a prompt response in the form of inhibition of uterine contractions is noted. The aqueous solutions were less prompt in producing the inhibiting effect, but there is no reasonable doubt regarding their efficiency.

There is a group of obstetrical complications which seem to depend upon abnormal uterine contractibility. The stimulus for this abnormal irritability may come from various sources, but the end-result is the same in all cases—the emptying of the uterus unless the contractions can be controlled. Under certain circumstances it may be desirable to permit the uterus to expel its contents prematurely, as for example when it contains a dead fetus, a monstrosity, or an hydatid mole. Under most circumstances, however, the retention of the product of conception until full term is very desirable even when certain complications of pregnancy are present. At least the temporary inhibition of uterine contractions is imperative when the fetus is just on the borderline of viability. Our experience with

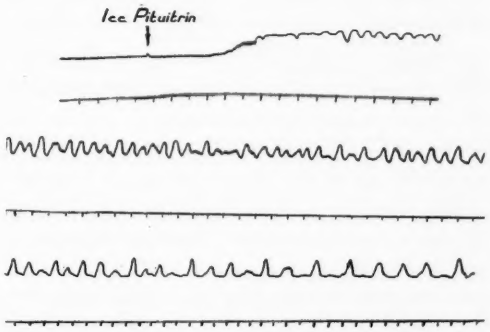

Fig. 2. Effect of icc. of pituitrin on uterine contractions.

the use of progestin preparations in such cases leads us to believe that they are extremely valuable even though the numbers treated thus far are not great enough to be entirely convincing.

In order to appreciate the fundamental factors which underlie the clinical phenomena apparent in some of these complicated cases, it is necessary to review the physiology of normal labor.

The mechanism of normal labor according to our conception is as follows:

The uterus, as all other hollow organs of the body under normal conditions, will try to expel anything that is put into its cavity. The natural

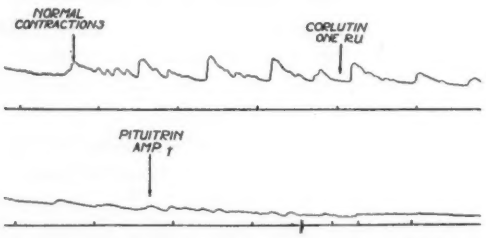

Fig. 3. The effect of progestin on uterine contractions stimulated by the metreurynter bag.

tendency for every uterus during pregnancy is to get rid of its contents. The substance in the body especially elaborated to prevent this is progesterone. In the early months of pregnancy this substance is formed in the corpus luteum of the ovary, later it is manufactured by the placenta. As pregnancy develops there occurs, due to stretching of the pelvic tissues, an irritation of the pelvic sympathetic ganglia. In response to this irritation, impulses reach the hypophysis which stimulate it to secrete physiological doses of pituitrin into the blood stream. These stimulate the uterine muscle to contract which irritates the cervix and the sympathetic ganglia and starts the cycle over again. In order to prevent this from occurring before completion of fetal development, nature has prepared an anti pituitrin in the form of progesterone. The action of this hormone on uterine contractions, both normal and pituitrin stimulated, is clearly seen in the tracings.

Figure 2, shows the effect of a one cc. injection of pituitrin stimulating uterine contractions. The contractions start about four minutes after the pituitrin is injected, are tetanic at first, and are followed by regular rhythmical contractions which persist for two hours or longer.

Figure 3, shows that the presence of the inflated bag will produce uterine contractions and that these can be stopped by the injection of one rabbit unit of a progesterone preparation, after

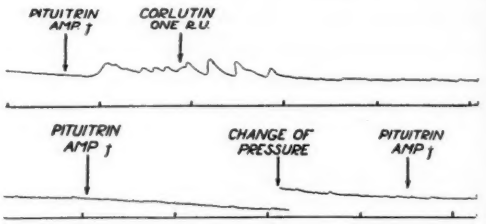

Fig. 4. The effect of progestin on uterine contractions stimulated by pituitrin.

which further injection of pituitrin causes no uterine contractions.

Figure 4, shows what happens when one cc. of pituitrin is injected initiating contractions which were promptly stopped by progesterone, after which the uterus was refractory to stimulation by pituitrin.

Figure 5, shows that after a preliminary injection of progestin the uterus fails to respond to bag or pituitrin stimulation even when sensitized by estrogenic hormones.

Figure 6, demonstrates that morphine, which is much used in the treatment of threatened

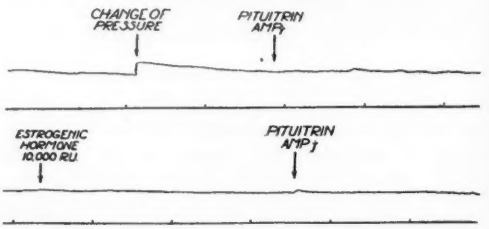

Fig. 5. Failure of uterus to respond to pitruitrin following preliminary injection of progestin.

abortion, not only does not cause sedation of uterine contractions but actually seems to stimulate them.

Figure 7, shows that the estrogenic hormone seems to sensitize the uterus so that the presence of the inflated bag leads to uterine contractions.

Because of the expense of the oily extract of the corpus luteum its continued use in women with threatened and habitual abortion is often

prohibitive. We therefore began to investigate other extracts of the corpus luteum. We were told that progesterone was only soluble in oily solutions. However, on testing out a water soluble extract of corpus luteum made by Hynson, Westcott and Dunning, we were able to demonstrate that there was an appreciable amount of progesterone in the solution.

Figures 8 and 9, show that in five-cc. doses uterine contractions would definitely decrease in

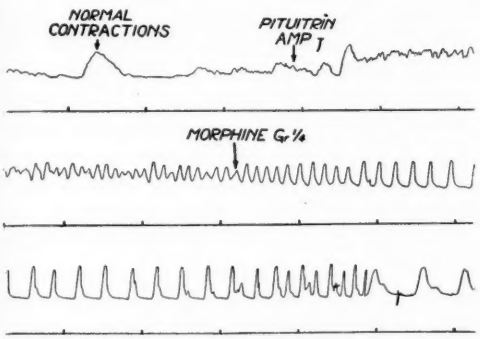

Fig. 6. The stimulating effect of morphine on uterine contractions initiated by pituitrin.

frequency and strength while ten cc. inhibited uterine action entirely.

Figure 10, is an extremely interesting tracing showing the presence of the hormone progesterone in the circulating blood coming from the ovary containing the corpus luteum. The blood was withdrawn from the ovarian vein of a pa-

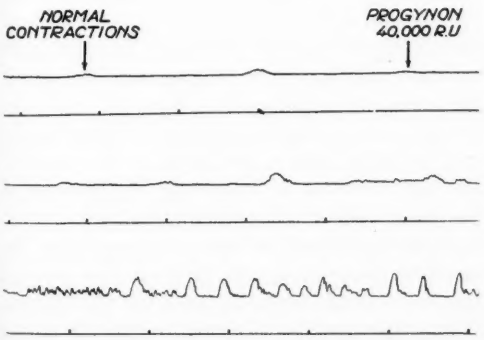

Fig. 7. The sensitizing action of estrogenic hormone on uterine contractions.

tient being operated upon in my clinic by my colleagues, Dr. William H. Browne and Dr. George Rezek. The blood was allowed to coagulate and the serum thus obtained was injected after contractions had been established by pituitrin, using the same technique and apparatus that had been used for the previous experiments. It will be seen that as little as two cc. had a distinct inhibiting action and that four and six additional cc. entirely inhibited the stimulative effect of one cc. of pituitrin.

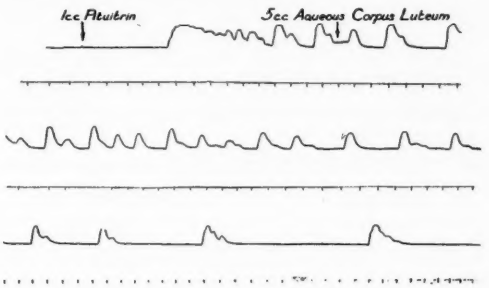

Fig. 8. The effect of corpus luteum extract on uterine contractions initiated by pituitrin.

My colleagues, Doctors Julius E. Lackner and Leon Krohn worked with me in a clinical study of the treatment of threatened and habitual abortion. A table showing the results of this management previously published is included, Figure 11. Since this was compiled many additional cases have been added and the results are practically a duplication of our former observations.

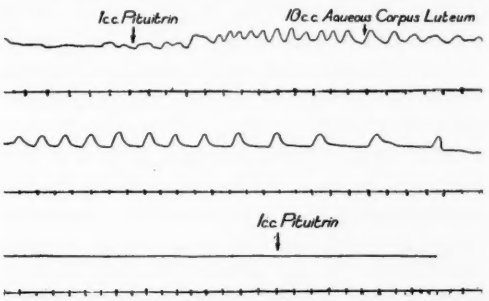

Fig. 9. The effect of 10 cc. of corpus luteum extract on uterine contractions stimulated by pituitrin.

What we have learned from further experience in the abortion cases is that it is important to determine whether or not the product of conception is still alive at the time the patient comes under observation. To this end we have used the "dead fetus reaction" worked out in my clinic by Dr. George H. Rezek. I had assigned Dr. Rezek the duty of making the injections and reading the reactions in the ovary of the test animals in all cases in which it was thought

necessary to do a Friedman test for the diagnosis of pregnancy. One day he brought me a pair of ovaries saying that the reaction was neither strongly positive nor negative. He also made the statement that the fetus in that case was dead. I suggested that he get other cases with a known dead fetus and run the test in them. This was done and we were greatly surprised to find that in about 95 per cent. of the

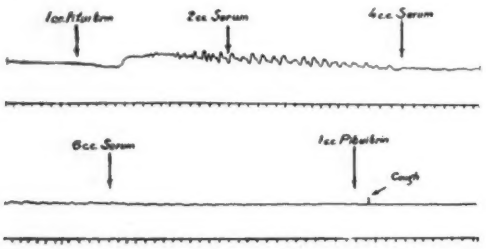

Fig. 10. The effect of blood serum from the vein of an ovary containing corpus luteum on uterine contractions produced by pituitrin.

cases tested the reaction was sufficiently clear cut to make a diagnosis of death of the fetus extremely probable. Obviously progesterone preparations are only valuable in the treatment of those cases in which the fetus is alive. Complete, incomplete, and missed abortions are contraindications for its use.

Premature detachment of the placenta can be defined as a "glorified abortion." The cause of the detachment seems to be uterine contractions which are stimulated by the extravasation of blood between the placenta and the uterine wall. This is almost always a limited process at first and only becomes extensive after the uterine contractions have caused extensive separation. Since this is so it would seem logical to apply progesterone by hypodermic injection in large doses as soon as the diagnosis of partial premature separation can be made from the early signs and symptoms. This we have been able to do in five cases with excellent results. The accident is especially apt to occur at about that period of gestation when the baby is on the border line of viability. Under these conditions if the uterus is emptied the fetal mortality rate will be very high. By keeping the uterus from contracting and thus preventing further placenta separation, the fetus may gain another three or four weeks of intra-uterine life which will practically insure its survival if then delivered by cesarean section. Of course if the baby is already close to term at the time of the first symptoms of premature separation, it should be delivered at once by cesarean section if there is any evidence of fetal distress as evidenced by abnormalities of the heart tones.

Placenta previa should be considered a premature detachment of the placenta which happens to be attached to the lower uterine segment.

The difference between it and the other types of premature detachment lies in the fact that the detachment is due to a thinning and stretching of the lower uterine segment, usually after the seventh month of pregnancy. Such a condition inevitably leads to separation of the placenta from the lower uterine segment and a hemorrhage of varying degrees of severity depending on the amount of separation. The mechanism of formation of the lower uterine segment depends in part at least, on the intermittent contractions of Braxton Hicks. In a given case presenting hemorrhage from placenta previa in which a nonviable or very premature baby is present in utero, progestin should be given to decrease uterine contractions and thus inhibit further formation of the lower uterine segment and further separation and bleeding until the fetus has attained viability; even in cases in which the bleeding occurs later in pregnancy it can be used to quiet uterine contractions pending arrangements being made for other forms of treatment.

Premature rupture of the membranes is one of the serious complications of pregnancy, and especially so when it occurs before or just at the seventh lunar month, because of the danger of premature expulsion of the baby. In these cases we have used progestin preparations to prevent the onset of uterine contractions and have been successful in accomplishing this for varying periods of time from a few days up to a month. This has resulted in improving the chances of the baby to survive by reducing its prematurity. In these cases there is always a danger that the amniotic fluid will become infected from upward invasion of the bacterial flora of the vagina. When clinical evidence shows that this is taking place, the progestin injections are stopped and the uterus is allowed to empty itself, irrespective of the condition of the fetus.

The onset of premature labor has been controlled by the injection of progestin preparations. However, when labor has actually started, the

effect of progestin on the frequency and strength of uterine contractions has been negligible.

TABLE I

Group	No.	Success	Failure
Threatened Abortions only. .	11	10 (91%)	1 (9%)
Habitual Abortions only.....	13	10 (77%)	3 (23%)
Threatened and Habitual Abortions	17	14 (79%)	3 (21%)
Total Cases treated with Progestin	41	34 (83%)	7 (17%)

Fig. 11. Clinical results in the treatment of habitual and threatened abortion by progestin prepartions.

Discussion: It is seen therefore, that in progestin preparations we have apparently a physiological agent which can be used in the management of obstetrical cases which are complicated by the fact that the uterus is abnormally irritable. As a result, hormone imbalance follows or some accidental complication of gestation. It is apparently ineffectual in the doses we had used in those cases in which the fetus is dead and in those patients who are in actual labor.

The argument has been advanced that by treating women who are aborting, and preventing the expulsion of the fetus, that in a rather large percentage of cases the fetus will show developmental abnormalities. According to our experience there is no evidenec that this is the case since there was no greater incidence of deformity in our treated cases that went on to maturity than in others not so treated.

We have assayed a number of extracts prepared from the corpus luteum which are on the market and find that there is a considerable difference in potency. In our hands the oily solution of progestin prepared by Upjohn and Company and the watery extract of corpus luteum prepared by Hynson, Westcott and Dunning have given the best results.

The prophylactic use of these preparations is also recommended. For example, a pregnant woman who is forced to take a long automobile trip, a pregnant woman who receives a severe mental shock, such as news of the death of a near relative, should be given prophylactically a few injections of progestin. It is well known that high temperatures tend to produce abortion and premature labor, therefore, in various diseases associated with febrile reactions, prophylactic use of progestin would seem to be indicated. In such cases the additional advantage in preventing abortion in an already infected patient with the attendant danger of subsequent puerperal sepsis is important.

As an index of the efficacy of this preparation, we may say that in the last year we have treated successfully, nine partial premature detachment of the placenta; one placenta previa; ten premature labors; one premature rupture of the membranes and two habitual abortions.

During the same time we treated unsuccessfully, one habitual abortion; one threatened abortion; two premature rupture of the membranes, and one premature detachment of the placenta.

With the evidence presented, both from the clinical and laboratory side, it is obvious that the use of progestin is of extreme importance in the management of habitual and threatened abortion, premature detachment of the placenta, placenta previa, premature rupture of the membranes and under any circumstance which might lead to undue stimulation of the pregnant uterus. The importance of its prophylactic use is stressed and its impotence in the presence of a dead fetus or after the onset of labor is pointed out. The importance of selecting physiologically active preparations is urged.

Note: In this article the preparations used to produce the inhibitory effect on uterine contractions were prepared by several organizations using different methods of extraction of the active principle of corpus luteum (progesterone). The water soluble extractive has not been shown to be chemically identical with progesterone preparations, as described in The Journal of the American Medical Association, May 23rd, 1936, Vol. 106, pp. 1808-1809, but it produces under the conditions of these experiments, identical effects in inhibiting uterine contractions.

TREATMENT OF ARTICULAR DISORDERS WITH PROGESTERONE

"Touw and Kuipers treated three women who had articular disorders with injections of progesterone. The authors were induced to resort to this treatment by the observation that as soon as the patients became pregnant the articular disorders disappeared, to return again a few weeks after confinement. In the first patient it appeared that the complaints were caused by disturbances in the growth of the epiphyses of the hip joints with resulting arthrosis deformans, whereas the other two patients had chronic articular rheumatism (primary chronic polyarthritis). The case histories indicate that the progesterone was administered by daily intramuscular injections of 2 cc. (10 units) during the second phase of the intermenstrual period. The results obtained with this treatment were favorable, but its mode of action is not understood as yet. The authors are as yet unable to estimate the duration of the improvement, but in one of the patients it has so far per-

sisted for six months and in another for four months. In case of recurrence, the authors intend to apply the same treatment. However, they emphasize that the progesterone therapy is not necessarily indicated in all articular disturbances. They only wish to point out that there are patients in whom the anamnesis justifies treatment with progesterone."

HEALTHIEST PEOPLE IN THE WORLD

"As a people this includes Canada—we are, beyond all doubt, the healthiest in the world. The reason is, perhaps, that more than most, we have emerged from medical superstition. Still there is a lot of nonesense uttered on this point. One recently read a booklet written by a socalled 'liberal' who used the perfectly legitimate fact that 50 per cent of our people the year before had not received any medical attention. He used that fact to imply that 50 per cent of our people were denied or unable to get such attention. Apparently it did not occur to him that at least half our population might be so healthy as not to need medical attention. Any doctor will confirm, that part of the 50 per cent who do demand medical attention do not need it—they are neurotics, or persons frightened on account of others, or young parents—God bless them!—who want to be 'sure' about the baby. As a matter of statistics, 47 per cent of our people never have required medical attention because of diseases."—J. J. Cameron.

FREEDOM AND MEDICINE

"We should be mindful of the fact that the greatest advancement in the science of medicine, that of the past century, has taken place in the period characterized by the greatest human liberty and freedom from political restraint. In no other field has the necessity for free individual initiative been more clearly demonstrated than in the science of medicine. It is of the utmost importance that everything be done to preserve those natural incentives to individual accomplishment. Compulsion and the lack of natural rewards for individual improvement, such as must prevail in any political system, cannot fail to have a deleterious effect upon all individual effort. Socialized medicine would of necessity and because of the manner in which it must be operated, tend to freeze the present state of medical knowledge and check advancement."—(Hon. F. C. Smith, of Ohio.)

STAMMERERS

The incidence of stammering among Liverpool elementary school children examined at routine inspections amounted to 0.52 per cent in 1938, 208 stammerers being discovered by the School Medical Officers. In his latest annual report as Medical Officer of Health, Dr. W. M. Frazer, O. B. E., states that before such children are admitted to the special classes for treatment they are given a general examination, and the parents are advised regarding general health and hygiene and of any physical defects which may be contributory factors in the causation of the stammer.

It is explained to both children and parents that improvement is invariably slow, and that the rate of progress, under treatment, is dependent upon the personal efforts and perseverance of the children, and the parents are asked for their cooperation.—World Education, November, 1939, p. 491.

NAZI INSURANCE HIGH

Professor Winslow of Yale University is authority for the statement, that for sickness insurance alone the German laborer must set aside something more than eight per cent of his income (8.5% to be exact) and that the employer for the same purpose adds five per cent more. Statistics in the United States claim that the average cost of medical care to the citizenry is something like three per cent of the income. Undoubtedly Germany's other ten and five-tenths per cent (10.5) is used for paying salaries and buying red tape for the tremendous political bureaucracy needed to handle the German social insurance system.

MEDICAL TREATMENT NOT SCHOOL'S RESPONSIBILITY

"The multiplication of clinics for medical and dental treatment in certain schools is not evidence of progress in public health," writes Dr. Leigh F. Robinson, President of the Florida Medical Association. "It is rather a concession to expediency, and an acknowledgment that constructive community cooperation has not been developed."

Believing, however, that the schools have sufficient to do without indulging in medical treatment of school children, he urges that school officials provide, first, proper wholesome surroundings which include modern building and sanitary standards; second, necessary facilities for prevention, spread, and immunization against communicable diseases; third, a well balanced curriculum with thoughts against overloading, and with proper balance between mental and physical activities: fourth, adequate instruction in healthy living; and fifth, against the waste and misuse of public funds collected for educational purposes.—Leigh F. Robinson, M. D., Florida Health Notes (September, 1939).

Marriages

ALLEN H. HOOVER to Miss Margaret B. Dailey, both of Chicago, Oct. 21, 1939.

ROBERT GADDIS PRICE, Bloomington, Ill., to Miss Catherine Justine Sinclaire, of Brooklyn, Nov. 25, 1939.

IRVING PUNTENNEY to Miss Ethel Krug, both of Chicago, Oct. 17, 1939.

KENT L. WATTLEWORTH, Newton, Ill., to Miss Jean Hine, of Indianapolis, in Frankfort, Ind., Aug. 17, 1939.

WILLIAM H. WRIGHT to Miss V. Ruth Emmerson, both of Chicago, in Bellwood, Ill., Aug. 4, 1939.

Society Proceedings

Coming Meetings

February 13—Kankakee Cunty Medical Society—Noon, McBroom's Cafe, Kankakee.

February 13—Knox County Medical Society—6:30 P. M., Galesburg Club, Galesburg. Dr. F. E. Schmidt, "Pneumonia" two motion pictures on pneumonia and allergy.

February 13—Bond County Medical Society—7:00 P. M., Thomas Hotel, Greenville. Dr. Richard Paddock, "Pernicious Vomiting and Toxemias of Pregnancy."

February 13—Effingham County Medical Society—6:30 P. M., Benwood Hotel, Effingham. Dr. Robert S. McCaughey, "Common Colds and Upper Respiratory Infections."

February 13—Lake County Medical Society—Evening, Abbott Laboratories, North Chicago. Dr. L. F. Weber, "Common Skin Diseases."

February 14—McDonough County Medical Society—6:00 P. M., LaMoine Hotel, Macomb. Dr. Henry Irish, "Useful Drugs in Infancy."

February 15—Henry County Medical Society—6:00 P. M., Kewanee. Dr. Italo F. Volini, "Pneumonia"; Dr. Frederick Rehm Schmidt, "Common Skin Diseases."

February 16—Will-Grundy County Medical Society—12:00, Louis Joliet Hotel, Joliet. Dr. Eugene F. Traut, "Migraine, Its Treatment."

February 20—Fayette County Medical Society—6:30 P. M., Evans Hotel, Vandalia. Dr. M. P. Borovsky, "Diseases of the Newborn."

February 22—Montgomery County Medical Society—7:00 P. M., Elks Club, Litchfield. Dr. James T. Case, "Symptoms and Differential Diagnosis of Carcinoma of the Colon."

February 28—Christian County Medical Society—6:30 P. M., Taylorville Country Club, Taylorville. Dr. Ralph Reis, "The Difficulties of Obstetric Diagnosis"; Dr. Harry Leichenger, "The Prophylaxis of Contagious Diseases."

March 1—Will-Grundy County Medical Society—12:00, Louis Joliet Hotel, Joliet. Dr. Carlo S. Scuderi, "Newer Ideas of Colles Fractures."

March 4—Menard-Mason County Medical Societies—7:30 P. M., Masonic Hall, Mason City. Dr. H. C. Hesseltine, "The Status of Caesarian Section"; Dr. M. L. Blatt, "Upper Respiratory Infections and Their Sequelae."

March 5—Vermilion County Medical Society—6:00 P. M., Danville, Hotel Wolford. Dr. Clark W. Finnerud, "Diseases of the Skin."

March 6—Schmitt Memorial Hospital, Beardstown—6:15 P. M. Dinner. Dr. A. E. Kanter, "Prevention of Abortion with a Discussion of Endocrine Therapy."

March 8—Will-Grundy County Medical Society—12:00, Louis Joliet Hotel, Joliet. Dr. Charles Newberger, "Reducing the Hazards of Childbirth."

March 8—Jersey-Greene County Medical Societies—6:30 P. M., Baptist Church, Carrollton. Dr. H. W. Elghammer, "Rheumatic Heart Disease in Children."

March 12—Bond County Medical Society—7:00 P. M., Dinner, Thomas Hotel, Greeneville. Dr. Craig Butler, "The Premature Infant"; Dr. W. C. Scrivener, "Management of Obstetric Hemorrhages."

POST GRADUATE CLINICAL CONFERENCE DU QUOIN

March 7, 1940

The third postgraduate clinical conference sponsored by the Illinois State Medical Society will be held at the Elks Club, DuQuoin on Thursday, March 7.

The program will start promptly at 1:00 P. M. and will continue as follows:

1:00-1:40 P. M.—Urology—Dr. Andy Hall, Jr., St. Louis, Mo.
1:40-2:20 P. M.—Dermatology—Dr. C. A. Lane, St. Louis, Mo.
2:20-3:00 P. M.—Pediatrics—Dr. J. C. Jaudon, St. Louis, Mo.
3:00-4:00 P. M.—Heart Clinic—with four patients—Dr. R. S. Berghoff, Chicago.
4:00-4:40 P. M.—Obstetrics—Dr. Frederick H. Falls, Chicago.
4:40-5:20 P. M.—Hand Infections—Dr. Dean Sauer, St. Louis, Mo.
5:20-6:00 P. M.—Fractures—Dr. Philip H. Kreuscher, Chicago.
6:30-7:30 P. M.—Dinner.
7:30-8:30 P. M.—Oration in Surgery—Dr. C. W. Mayo, Rochester, Minn.
8:30-9:00 P. M.—Endocrinology—Dr. James H. Hutton, Chicago.
9:00-9:30 P. M.—Medical Economics—Dr. E. S. Hamilton, Kankakee.

Doctors of Illinois are cordially invited to attend this meeting. No registration fee will be charged. Those in charge of the arrangements are Dr. James S. Templeton, Dr. Andy Hall and Doctor H. G. Horstman.

Personals

Drs. Joseph Greengard and Edward L. Cornell presented a program on "Pneumoia in Childhood" and "Management of Prolonged Labor" before the Menard-Mason County Medical Societies at Mason City, Illinois, January 9.

Drs. Franklin J. Corper and O. S. Krebs of St. Louis presented a program on "Pneumonia in Children" and "Management of the Puerperium and Its Complications" before the Bond County Medical Society at Greenville, Illinois, on January 9.

Dr. Henry Buxbaum addressed the McLean

County Medical Society at Bloomington on January 9.

Drs. Joseph Baer and H. G. Poncher addressed the Jersey-Greene County Medical Societies on January 12 at Carrollton on "The Endocrines in Obstetrics and Gynecology" and "Feeding the Baby."

Dr. William J. Dieckman gave a paper on "Eclampsia" before the Saline County Medical Society on January 25.

Drs. Julius Hess and Henry Buxbaum presented a program on "The Premature Infant" and "Toxemias of Pregnancy" before the doctors of the Christian County Medical Society on January 24.

Dr. James J. Callahan was scheduled to give a paper on "Fractures About the Elbow before the Will-Grundy County Medical Society January 23.

Dr. Frederick H. Falls was invited to address a lay meeting at Mattoon, sponsored by the Coles-Cumberland County Medical Society January 26 on "Maternal Welfare."

Dr. Theodore T. Stone addressed the Bureau County Medical Society on January 9 at Princeton, on "Newer Methods of Treatment of Nervous and Mental Disorders."

Dr. Alonzo H. Hall, Niantic, recently was presented with a gold emblem by the state medical society, signifying the completion of fifty years in the practice of medicine.

Dr. Alfred S. Ash, formerly of Chicago, has been placed in charge of the Soldiers' and Sailors' Home and Hospital, Quincy, succeeding the late Dr. Chauncey E. Ehle.

Dr. Kellogg Speed, Chicago, discussed "Fractures About the Elbow Joint" before the Madison County Medical Society, Edwardsville, January 5.

Dr. Walter H. Baer, superintendent of the Peoria State Hospital, has been appointed acting superintendent at the Manteno State Hospital, Manteno, succeeding Dr. Ralph T. Hinton, it is reported.

The Chicago Council of Medical Women was addressed January 10, among others, by Drs. Victoire D. Lespinasse on "Urinary Tract Changes in Pregnancy."

Dr. Sigismund S. Goldwater, commissioner, department of hospitals of New York City, addressed the fourth anniversary dinner of the Chicago Hospital Council at the Blackstone Hotel January 15. His subject was "Do American Cities Need Both Voluntary and Tax-Supported Hospitals?"

The Chicago Society of Allergy was addressed January 15 by Drs. French K. Hansel, St. Louis, and Milton B. Cohen, Cleveland, on "Allergy of the Nose and Paranasal Sinuses from the Standpoint of the Otolaryngologist and the Allergist" and "Metabolic Aspects of Allergy" respectively.

A symposium on epidemic tracheobronchitis was presented by Drs. Chevalier L. Jackson, Philadelphia, and Joseph Brennemann, Chicago, before the Peoria City Medical Society January 4. Dr. Willard Van Hazel, Chicago, addressed the society January 16 on "Diagnosis and Treatment of Empyema."

Dr. Vilray P. Blair, professor of clinical surgery, Washington University School of Medicine, St. Louis, addressed the Chicago Medical Society January 17 at the Chicago Woman's Club. His subject was "Treatment of Facial Deformities Due to Trauma." A symposium on industrial medicine nad traumatic surgery constitutes the clinical session at St. Luke's Hospital during the day.

Dr. Hugh R. Butt, Rochester, Minn., addressed the North Shore Branch of the Chicago Medical Society January 2 on "Vitamins, Recent Advances and Their Clinical Application." Dr. Marion A. Blankenhorn, Cincinnati, discussed "The Serum and Chemotherapy of Lobar Pneumonia" before the North Side Branch January 4.

The past presidents of the Peoria City Medical Society were entertained at the second annual dinner given in their honor at the Hotel Pere Marquette November 21. There are about twenty-five past presidents now living. Dr. Irving S. Cutter, dean, Northwestern University Medical School, Chicago, spoke on "Some Literary Physicians."

Dr. Charles E. Soule, Beardstown, was recently guest of honor at a banquet given by the Cass County Medical Society in recognition of his fifty years in the practice of medicine. The

Illinois State Medical Society presented him with a certificate and medal.

Dr. Joseph T. Maher, formerly of Koch, Mo., has been appointed medical director of the Madison County Tuberculosis Sanitarium, Edwardsville, following the resignation of Dr. Oscar C. Heyer, who held the position for more than four years.

Drs. Walter D. Stevenson, Earl L. Caddick and Harry O. Collins were honored by St. Mary's Hospital, Quincy, with a dinner November 7 to observe their completion of twenty-five years on the staff of the hospital.

Members of the Illinois State Medical Society and citizens of Scott County honored Drs. George W. Bowman, Alsey, and George M. Straight, Winchester, at a banquet November 22 held to celebrate their many years of practice. Dr. Bowman has been practicing in Scott County for fifty-nine years and Dr. Straight fifty-eight.

At a meeting of the Chicago Pediatric Society January 16 Dr. Katsuji Kato spoke on "The Prothrombin in the Blood of Newly Born Mature and Immature Infants as Determined by the Microprothrombin Test" and Dr. Eugene T. McEnery and Mrs. Frances Perlowski Gaines on "Tongue-Tie in Infants and Children."

At a meeting of the Chicago Laryngological and Otological Society January 8 the speakers were Drs. John R. Lindsay on "Laryngocele"; Gordon H. Scott, "Caries of the Vertebrae in Retropharyngeal Space Infection"; Henry B. Perlman, "The Eustachian Tube: Normal Physiology; Abnormal Patency," and Paul C. Bucy and William Tracy Haverfield, "Cranial and Intracranial Complications of Frontal Sinusitis."

Dr. Arthur F. Abt addressed the Whiteside County Medical Society at Sterling on January 11, subject "Pros and Cons for Sulfanilamide Therapy in Infants and Children."

Dr. Leon Unger was invited to give a paper on "Newer Phases of Migraine" before the Macon County Medical Society at Decatur on January 30.

Drs. Ford Hick and Howard A. Lindberg presented a pneumonia program before the Will-Grundy County Medical Society at noon, February 2.

Dr. A. J. Kobak was invited to give a paper on "Management of Prolonged Labor" before the Madison County Medical Society on February 2.

Drs. Ralph Reis and H. J. Noyes were invited to present the January 25th program before the Logan County Medical Society. Their subjects were "Management of the Puerperium and Its Complications" and "The Present Status of Dental Caries from the Standpoint of Knowledge of Etiology, Treatment and Dental Caries as an Index of Nutritional Adjustment."

Dr. Leon Unger addressed the Union County Medical Society at Anna, Illinois, on January 11, 1940. The subject was "The Newer Phases of Migraine."

At the December meeting of the American Association for the Advancement of Science, Dr. Edmund Jacobson announced a new instrument —The Integrating Neurovoltmeter—to afford the direct measurement of nervous or of muscular states in various diseases, without anesthetic.

News Notes

—The McDonough County Medical Society last Tuesday presented to Dr. Elizabeth R. Miner, of Macomb, a check for twenty-five dollars as a token of their appreciation of her work as secretary-treasurer for the Society for the last fifteen yeas. She was elected for life to this office but resigned recently as she and her husband decided to spend their winters in Florida. Dr. Miner has been state delegate for twenty years, and has held every office in the gift of the County Society, as well as the office of second vice-president of the Illinois State Medical Society.

—The construction of a tuberculosis hospital at the main institution of the Lincoln State School and Colony will soon be started, according to *Welfare*. The hospital will provide beds for thirty-three male and thirty-three female patients in two large wards and four private rooms.

—The University of Chicago will receive about $2,000,000 under the will of Orson C. Wells, retired Chicago broker, who died December 10. Mr. Wells directed that the gift be used to found a permanent fund for medical education and research in connection with the Billings Clinic, a part of the Albert Merritt Billings Hospital, at the institution. The university will use the gift to meet expenses in its medical work, it was

stated. The will also provides for a $50,000 bequest to the Presbyterian Hospital for use in urologic research.

—Dedicatory exercises of the new quarters for the tumor clinic of Michael Reese Hospital were held January 25 in the Rothschild Auditorium, Nurses' Residence, with Mr. Harry N. Gottlieb, president, board of directors, presiding. Dr. Erich M. Uhlmann, director of the clinic, will give the introductory address. Arthur H. Compton, Ph.D., professor of physics, University of Chicago, will discuss "Possible Benefits of New Types of Radiation" and Carl Voegtlin, Ph.D., chief, National Cancer Institute, Bethesda, Md., "Problems in Fundamental Cancer Research." The new tumor clinic has adequate space for the examination, diagnosis and treatment of patients suffering from neoplastic diseases. There is also a laboratory for biophysical research. Specially protected rooms have been constructed for the housing of a 4 Gm. radium bomb for deep radium therapy, in addition to which 0.5 Gm. of radium in smaller units will be available for superficial and interstitial application. Two new x-ray machines, designed to be operated by a single transformer with the unusual feature of measuring directly the exact dosage on the patient, have been provided for this department. These new facilities have been made possible by the families of Max Straus and David Silberman.

—The second annual Midwestern Forum on Allergy will be held January 13-14 at the Palmer House. Among the speakers will be the following:

O. C. Durham, North Chicago, Results of Atmospheric Research During 1938-1939.

Dr. Theron G. Randolph, Milwaukee, Studies in Mold Allergy.

Dr. Frederick W. Wittich, Minneapolis, The Nature of Various Mill Dust Allergens.

Drs. John Warrick Thomas and John R. Forsythe, Cleveland, Allergic Purpura.

Dr. Clarence Bernstein, Chicago, Comments on Differential Diagnosis and Management of Cardiac and Bronchial Asthma.

Dr. Mary E. H. Loveless, New York, Changes in the Serum and Skin of the Allergic Patient During Specific Therapy.

Dr. Ethan Allan Brown, Boston, New Method of Medication for Allergic Complaints.

Dr. Paul R. Cannon, Chicago, The Mechanism of the Arthus Reaction and Its Relationship to Allergic Inflammation.

Dr. Richard H. Young and Mr. Robert P. Gilbert, Use of Aminophyllin to Control Bronchial Spasm Induced by Histamine.

Dr. Michael Zeller, Chicago, Passive Transfer Studies in Neurologic Conditions.

—A course on the "Technic of Gonioscopy and Interpretation of Gonioscopic Findings" will be given at the Illinois Eye and Ear Infirmary February 12-17 from 11 a. m. to 12:30 p. m. daily. Physicians with at least two years' experience or training in ophthalmology are eligible. The course will be limited to four persons and will consist largely of clinical work. The fee is $25 to be paid on registration. Applications should be addressed to the Dean of Education, Illinois Eye and Ear Infirmary, 904 West Adams Street.

—A total of 161,903 persons have attended the five trachoma clinics of the state during the five years of their existence. The clinics, established about 25 miles apart in Shawneetown, Jonesboro, Eldorado, Herrin and Vienna, give treatments each week to about 700 persons of all ages and in varying stages of trachoma. On August 12 there were 3,276 cases of positive trachoma under care at the five clinics, with 1,295 suspects under observation. According to *Welfare,* 191 operations were performed in the past year. Of the 331 new patients with positive trachoma received for treatment at the clinics in the year ended June 30, 1938, there were thirty-three, or 10 per cent, who had beginning trachoma; fifty-five were in the second stage, sixty-six in the third stage and 177 in the fourth stage. Many persons who came to the clinics for diagnosis did not have trachoma but suffered from other eye conditions which threatened their vision. Of these, eighty-eight were sent to the Illinois Eye and Ear Infirmary during the past year and twenty-four more are waiting until beds are available.

—A group of eleven hospitals serving three counties to the west of Chicago have united in a cooperative public relations effort. The principal activity at present is a half hour radio broadcast consisting of music, health dramatizations and the presentation of hospital facts of interest to the community. The hospitals cooperating in this are Copley, St. Joseph, Mercy and St.

Charles hospitals in Aurora; Sherman and St. Joseph hospitals in Elgin; the Elmhurst Community Hospital, Inc., in Elmhurst; the Community Hospital, Geneva; the Hinsdale Sanitarium and Hospital, Hinsdale; Silver Cross and St. Joseph's Hospitals, Joliet, and the City Hospital in St. Charles. Each week one of the hospitals acts as the host for the program, which includes a short history of the hospital and some pertinent community information. Dramatic material offered for the broadcast is furnished by the Bureau of Health Education of the American Medical Association. About two or three minutes toward the end of the program are devoted to a statement on some phase of hospital activity as it affects the community as a whole and the sick in particular, emphasizing always the work of the hospital and the physicians as a vital factor in the community, according to the announcement. These programs are being presented by radio station WMRO, Aurora, as a public service feature and the cost to the hospitals thus far has been small.

—Northwestern University will receive $1,500,000 and the University of Chicago $1,000,000 under the will of the late Mrs. Clara A. Abbott, widow of Dr. Wallace C. Abbott, founder of the Abbott Laboratories in North Chicago. The money in both instances is to be used for medical, surgical or chemical research. It was announced that the Physiological Building at the University of Chicago would be renamed Abbott Memorial Building, while Northwestern plans to give the name of Abbott Hall to the eighteen story dormitory which is being erected on the Chicago campus. The bequest to the Universityof Chicago assures an additional grant of $1,500,000 to the university.

THE INSTITUTE OF MEDICINE OF CHICAGO

Preliminary Announcement: On Friday evening, February 23, at 8:00 o'clock at the Palmer House Dr. Alan R. Moritz, professor of legal medicine at Harvard Medical School, will deliver the 16th Ludvig Hektoen Lecture of the Frank *Billings Foundation of the Institute of Medicine* of Chicago on "Medical Science and the Administration of Justice." On the same day a medicolegal symposium will be held under the auspices of the Institute's committee on medicolegal problems, Oscar T. Schultz, M. D., chairman. The morning session will be held in the amphitheater of Cook County Morgue and will be given by the scientific staff of the Cook County coroner's office. The afternoon session will be held at the University of Illinois Medical School, Albert J. Harno, dean of the College of Law of the University of Illinois, presiding. Addresses will be given by John I. Howe, Captain, Chicago Police Department, on "The Police and the Medical Profession"; I. Davidsohn, M. D., Pathologist, Mount Sinai Hospital, on "Medicolegal Application of Blood Groups"; Fred E. Inbau, Director, Chicago Police Scientific Crime Detection Laboratory, on "Legal Aspects of Blood-Grouping Tests"; and Benjamin C. Bachrach, Public Defender of Cook County, on Illinois Procedure in Criminal Cases Where It Is Claimed Before Trial That Defendant Is Insane." Following this session there will be a tour of the Chicago Police Laboratories.

Deaths

JOSEPH LOUIS AMOROSE, Galva, Ill.; Loyola University School of Medicine, Chicago, 1931; aged 40; was found dead, November 30, 1939, of an overdose of a sleeping compound.

CYRUS HILARY ANDERSON, Elgin, Ill.; Missouri Medical College, St. Louis, 1898; a Fellow A.M.A.; formerly managing officer of the East Moline (Ill.) State Hospital and the Anna (Ill.) State Hospital; on the staff of the Elgin State Hospital; aged 70; died, December 18, 1939, of coronary thrombosis.

SAMUEL EDWIN ARNOLD, Decatur, Ill.; Hering Medical College, Chicago, 1900; College of Physicians and Surgeons of Chicago, 1908; member of the Illinois State Medical Society; aged 65; died, November 30, 1939, of coronary thrombosis.

ANNIE ESTHER BARRON HARRISON, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1902; aged 67; died, December 3, 1939, of coronary thrombosis.

ROBERT B. BLUE, Chicago; Northwestern University Medical School, Chicago, 1904; a Fellow A.M.A.; assistant professor of ophthalmology at his alma mater; past president of the Chicago Ophthalmological Society; attending ophthalmologist and chief of staff, Wesley Memorial Hospital; aged 63; died, December 8, 1939, at his home in Flossmoor, Ill.

CARROLL BOOKER, Bogota, Ill.; Homeopathic Medical College of Missouri, St. Louis, 1884; aged 87; died, November 16, 1939, in Newton of chronic nephritis.

JAMES S. CATER, Hoopeston, Ill.; American Medical

College, St. Louis, 1883; aged 78; died, December 7, 1939, of myocarditis.

JOHN ALGERNON CAVANAUGH, Chicago; College of Physicians and Surgeons, School of Medicine of the University of Illinois, 1904; a Fellow A.M.A.; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons formerly on the staff of St. Luke's Hospital; aged 60; died, November 17, 1939, of metastatic carcinoma of the brain.

JOHN CLINTON CLAGG, Wheeler, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1896; aged 83; died, December 4, 1939, of cerebral hemorrhage.

FRANCIS CHALLFEE DICKSON, Galesburg, Ill.; Chicago Homeopathic Medical College, 1893; aged 71; died, November 19, 1939, in the St. Francis Hospital, Peoria.

FLOYD VICTOR EFFERDING, Chicago; Washington University School of Medicine, St. Louis, 1924; served during the World War; aged 42; died, November 26, 1939, in the Henrotin Hospital of meningitis.

HALVOR C. HANSON, Chicago; Rush Medical College, Chicago, 1903; on the staff of the Lutheran Deaconess Hospital; aged 58; died, December 10, 1939, of arteriosclerotic heart disease.

HENRY WILLIAM LANG, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1903; served during the World War; aged 62; died, December 3, 1939, of hypostatic pneumonia.

THOMAS ALEXANDER MCTAGGART, Pawnee, Ill.; Rush Medical College, Chicago, 1885; aged 78; died, December 11, 1939.

JOHN A. MILLER, Hamilton, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1881; aged 84; died, November 16, 1939, of chronic myocarditis and arteriosclerosis.

CLYDE DALE PENCE, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1897; a Fellow, A.M.A.; for many years on the staff of the West Side Hospital; editor of the ILLINOIS MEDICAL JOURNAL, 1913-1919; aged 71; died, December 1, 1939, of chronic myocarditis.

MICHAEL ROZUMSKI, Chicago; Bennett Medical College, Chicago, 1912; a Fellow, A.M.A.; aged 56; died, December 5, 1939, of carcinoma of the prostate.

ALEXANDER SCAGGS, Lovington, Ill.; Barnes Medical College, St. Louis, 1906; on the staff of the Decatur and Macon County Hospital, Decatur; aged 68; died, December 4, 1939, of acute pulmonary edema.

KIRK SHAWGO, Quincy, Ill.; Rush Medical College, Chicago, 1903; a Fellow, A.M.A.; on the staff of the Blessing Hospital; aged 64; died, November 2, 1939, of coronary thrombosis.

JOSEPH WHITEFIELD SMITH, Bloomington, Ill.; Keokuk (Iowa) Medical College, 1891; a Fellow, A.M.A.; Fellow of the American College of Surgeons; aged 76; on the staff of the Brokaw Hospital, where he died, November 19, 1939, of pneumonia and heart disease.

WILLIAM MARION STEARNS, Chicago; Chicago Homeopathic Medical College, 1880; Fellow of the American College of Surgeons; aged 83; was killed, December 1, 1939, in Evanston, Ill., when struck by an automobile while crossing the street.

OTTO P. STEINER, Chicago; Universität Basel Medizinische Fakultät, Switzerland, 1915; aged 49; died, October 4, 1939, of chronic myocarditis.

ISIDOR HARRSION TUMPEER, Chicago; Rush Medical College, Chicago, 1916; a Fellow, A.M.A.; formerly clinical assistant in pediatrics at the Northwestern University Medical School; senior lieutenant in the U. S. Navy during the World War; member of the American Academy of Pediatrics; president-elect of the Chicago Society of Allergy; aged 46; chief of staff of the pediatric department and head of the children's allergy department at the Michael Reese Hospital, where he died, November 29, 1939, of hypertension and heart disease.

HENRY P. WADSWORTH, Chicago; Rush Medical College, Chicago, 1889; also a dentist; served during the World War; aged 73; died, November 20, 1939, in Geneva, Ill., of poison, self administered.

FRANK S. WHITMAN, Belvidere, Ill.; Hahnemann Medical College and Hospital, Chicago, 1872; member of the Illinois State Medical Society; formerly mayor and bank president; at one time managing officer of the Elgin (Ill.) State Hospital; aged 90; died, December 10, 1939.

EDWIN LINCOLN WINSLOW, Danville, Ill.; University of Wooster Medical Department, Cleveland, 1892; served during the World War; aged 74; died, November 10, 1939, in a local hospital of heart disease.

"ISMS" DEFINED

Inasmuch as most of us are not very familiar with the various forms of government in the world today, and are embarrassed when trying to explain them, the following is offered to clarify the situation:

SOCIALISM: You have two cows. You give one to your neighbor.

COMMUNISM: You have two cows and give both to the Government and the Government gives you the milk.

FASCISM: You keep the cows and give the milk to the Government and the Government sells part of it back to you.

NAZI-ISM: The Government shoots you and takes the cows.

NEW DEALISM: The Government shoots one cow, milks the other and pours the milk down the sewer.

CAPITALISM: You sell one cow and buy a bull.—*Exchange.*

"JEST A MINUTE"

Sick Visitor: So you've been in every 'ospital in town, eh? Betcha 'aven't bin in the wimmen's 'ospital.

Octogenarian: Boy, I was born there.—*London Punch.*

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